

2023 State of the API Report



Table of contents

Key findings





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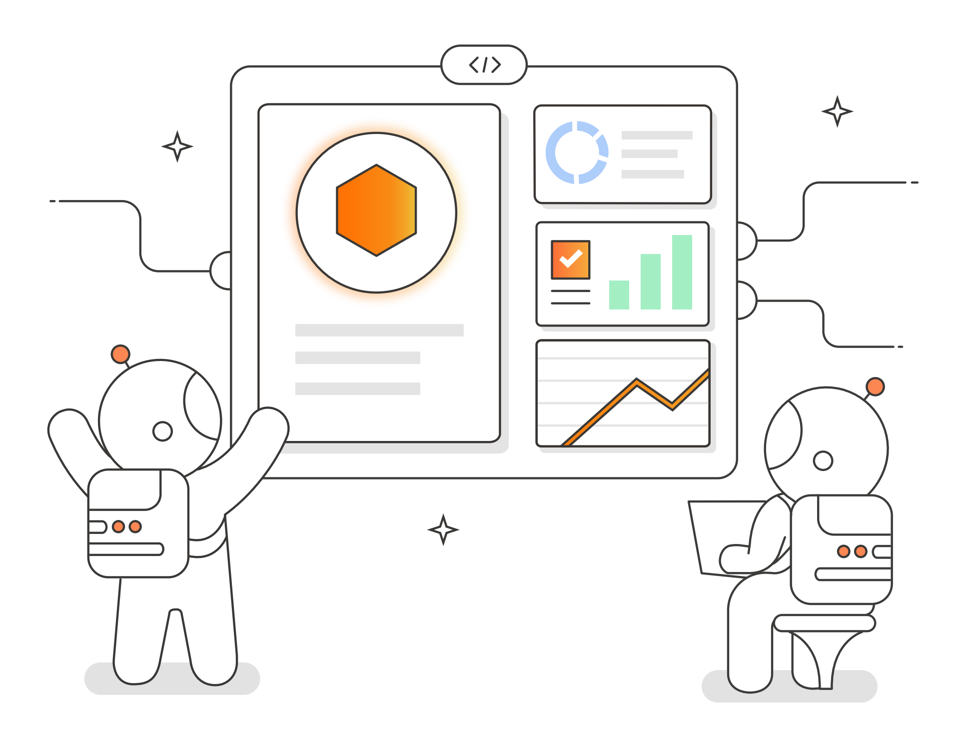


Introduction

For the fifth year, the State of the API is the world's largest and most comprehensive survey and report on APIs. More than 40,000 developers and API professionals have shared their thoughts on development priorities, their API tools, and where they see APIs going.

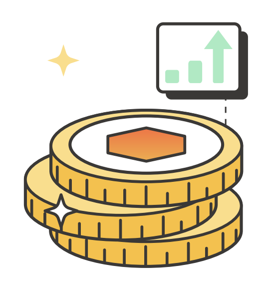
Our survey-takers range from CEOs and customer success managers to full-stack developers. Some work at small startups, others at companies with over 5,000 developers. They come from financial services, technology, healthcare, and other sectors. What unites them is their interest in APIs as the building blocks of modern software.

We've expanded this year's report to cover API monetization and generative AI. Until now, developers have primarily designed APIs for apps used by humans. Going forward, designing APIs for machines will become increasingly important as AI becomes more embedded in software interfaces.





Seven key findings



APIs are a moneymaker for most

Almost two-thirds of respondents said their APIs generate revenue. Of those respondents, 43% said APIs generate over a quarter of company revenue. In the financial services and advertising, API revenue was closely measured. It was judged the second-most important metric of public API success, just after usage.



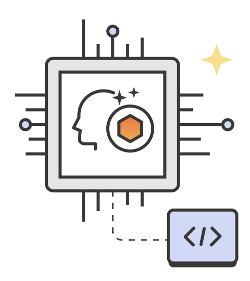
API pricing increasingly matters

When deciding whether to integrate with an API, 47% of respondents said price is a consideration. That's up from 41% in each of the previous two years. While other factors ranked higher than pricing, this finding may reflect a more cost-conscious API consumer in the wake of tech's economic contraction.



The outlook for API investments has brightened

Ninety-two percent of global respondents say investments in APIs will increase or stay the same over the next 12 months, up from 89% last year. This increase may reflect a sense in some quarters that the worst of tech's economic contraction has passed. At the same time, fewer respondents say they expect to cut investments into APIs this year.



Most API professionals are using AI to help code

Sixty percent of API professionals say they're using generative AI in their job. More than half of those use AI tools to find bugs in their code, and over a third rely on AI to generate code a computer will understand. When asked what type of project most excites developers in the coming year, the top answer was building AI-powered apps, which was chosen by over a third of respondents.



Seven key findings (cont)



Number of API-first leaders swells by almost half

This year, 11% of respondents defined themselves as API-first leaders, up from 8% in each of the previous two years. This elite group excels in almost every metric. For instance, API-first leaders produce APIs faster and report fewer failures. And when an API fails, most API-first leaders can restore it in less than an hour—a feat that only a minority of respondents can match.



When API developers exit, they leave a big hole

Software engineers have experienced the largest portion of tech layoffs so far in 2023. What does their absence mean for companies? Our findings indicate that companies with disorganized and poorly documented APIs may discover surprise problems when developers exit. Survey-takers said the top concerns were outdated documentation, zombie APIs, and loss of institutional memory.



API security is improving, but some sectors have work to do

API security improved for most respondents, with the frequency of incidents down in 2023. But some sectors fared worse than others. Survey-takers said monthly incidents occurred at higher rates in the automotive, education, and retail sectors than average.

Global growth of APIs





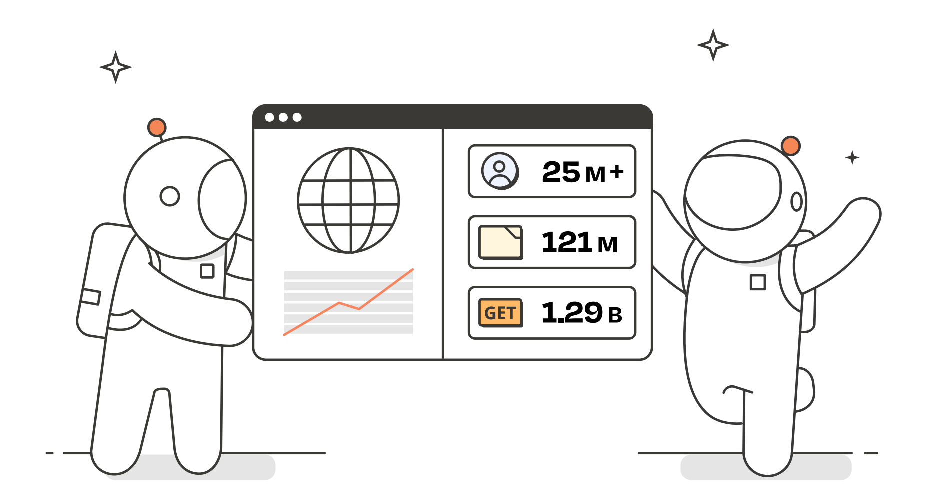
Global growth of APIs



Growing ecosystem

The global growth of the API ecosystem has been strong, from the number of practitioners and countries participating to the number of requests created. Here's where things stand as of late May 2023.

Postman Users:	Over 25 million
Collections created over all time:	121 million
Requests created in past year:	1.29 billion



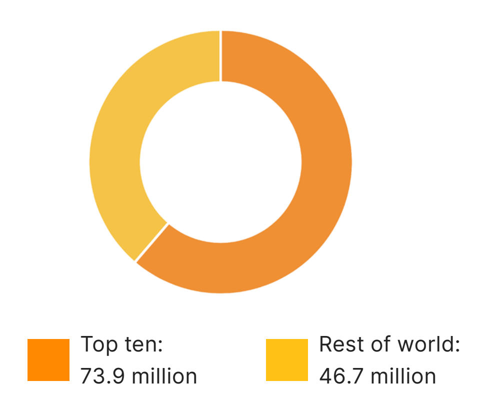


APIs are global

Which countries are creating the most collections and requests? We wanted to know, and we wanted to compare them with the rest of the world. Here's how it breaks down.

Countries and geographic areas: Over 235, including almost every country in the world—and even Antarctica.

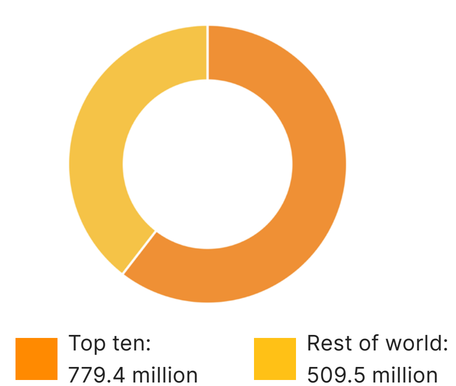
Collections created over all time



Top ten: 73.9 million

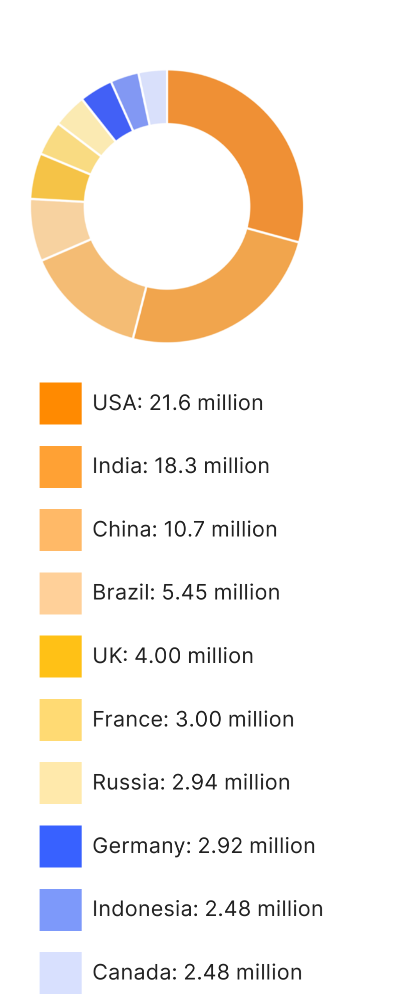
Rest of world: 46.7 million

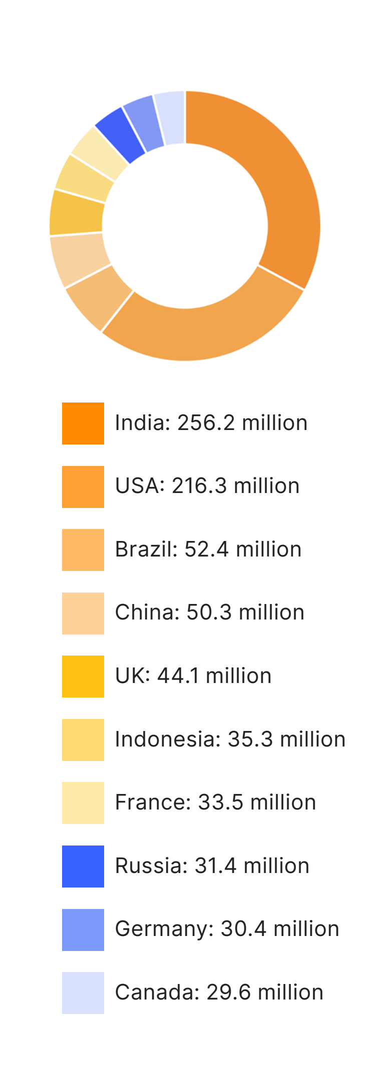
Requests created in past year



Top ten: 779.4 million

Rest of world: 509.5 million

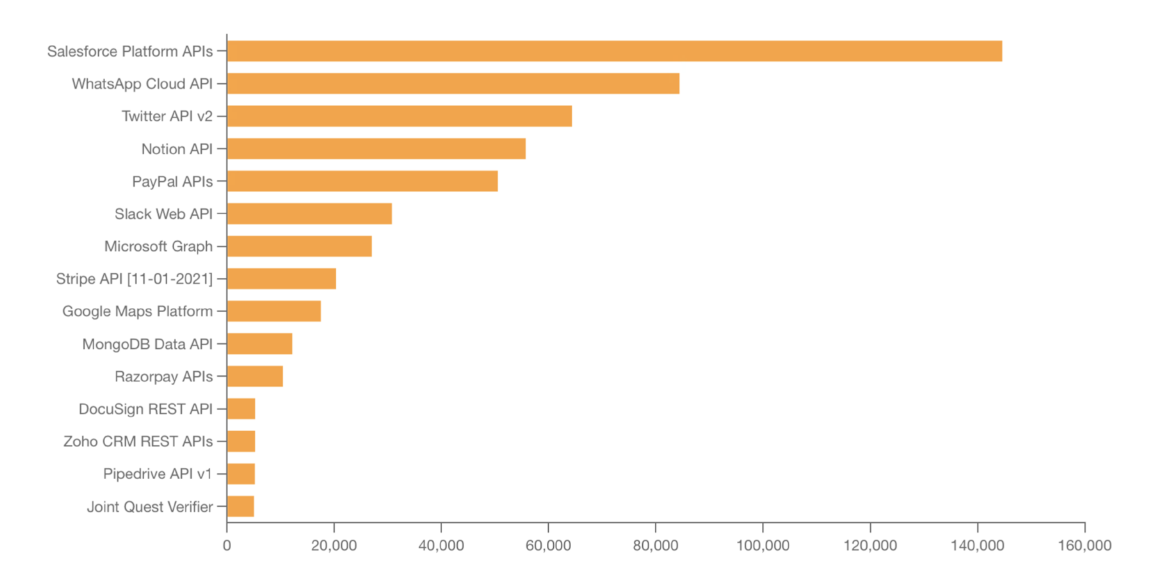






Most popular APIs

We looked across the Postman Public API Network, the world's largest public API hub, to see which API collections were forked most over the past year. Here's what we found.



> “PayPal's Public Postman Collection is in the top 10 most requested APIs in terms of popularity and quality. We're committed to investing in this next generation of technology.”
>
> **Dan Schulman,** President and CEO, PayPal



The 2023 API Platform Landscape

As more companies recognize APIs as the building blocks of modern software, API tools and services are evolving to meet their needs. These offerings span the API lifecycle, including design, testing, and security. They also include repositories for source code, API gateways, application performance monitoring tools, and CI/CD pipelines—all of which must integrate with API platforms to achieve optimal results.

Navigating this landscape requires careful thought. Here's our view of the API Platform Landscape today:

API Platform Landscape

Source Code

GitHub
GitLab
Bitbucket
AWS CodeCommit
Azure Repos
Assembla
SourceForge
Sonatype Nexus
JetBrains Space

API Platform

API Lifecycle

API Client | API Design & Mocking | API Testing & Automation | API Documentation | API Monitoring

Postman

- API Client: Insomnia, SoapUI, Apollo
- API Design & Mocking: Stoplight, ReadyAPI, Insomnia, Apiary, Apiwiz
- API Testing & Automation: SoapUI, Tosca, PactFlow, mabl, Eggplant, Katalon
- API Documentation: ReadMe, SwaggerHub, Stoplight, Redocly
- API Monitoring: Datadog API Monitoring, Checkly, Runscope, AlertSite, Sauce API Quality, Catchpoint

Collaboration

API Workspaces | API Catalog

Postman

- API Catalog: SwaggerHub, RapidAPI Hub, Kong Konnect, Stoplight, configure8, OpsLevel, Buf, Backstage, Cortex

Governance

API Security | API Observability

Postman

- API Security: Imperva, 42Crunch, Noname, Salt Security, Traceable, Wallarm, Neosec, Wib, Cequence, StackHawk, Veracode, APIsec
- API Observability: Moesif, Akita, Apollo, Uptrends, Akana, Optic, Seekret, Buf, APImetrics

CI/CD

Jenkins
CircleCI
JFrog Pipelines
GitLab
GitHub
Travis CI
Harness
AWS CodePipeline
Azure Pipelines
Bitbucket
Google Cloud
TeamCity
HashiCorp
CloudBees
Buddy
Atlassian Bamboo
Octopus Deploy
Buildkite
Bitrise

Cloud / Gateways

AWS API Gateway
Azure API Management
Apigee
MuleSoft
Kong API Gateway
KrakenD
Software AG
Gravitee
Tyk
Axway Amplify
Layer7 API Gateway
RedHat 3scale
Ambassador
IBM API Connect
Solo
Aklivity
Boomi
WSO2
TIBCO
Traefik

APM

Datadog APM
New Relic
BigPanda
Splunk
Grafana
Statuspage
OpsGenie
Tekton
Keen
Coralogix
PagerDuty
Elastic
Chronosphere
Observe
Cribl
ServiceNow Lightstep
Sentry
Honeycomb
LogicMonitor
Dynatrace
AppDynamics
IBM Instana

Specifications

OpenAPI
AsyncAPI
WSDL
Thrift
Protobuf
gRPC
GraphQL
RAML
Avro
API Blueprint
JSON Schema

Who works with APIs





Who works with APIs

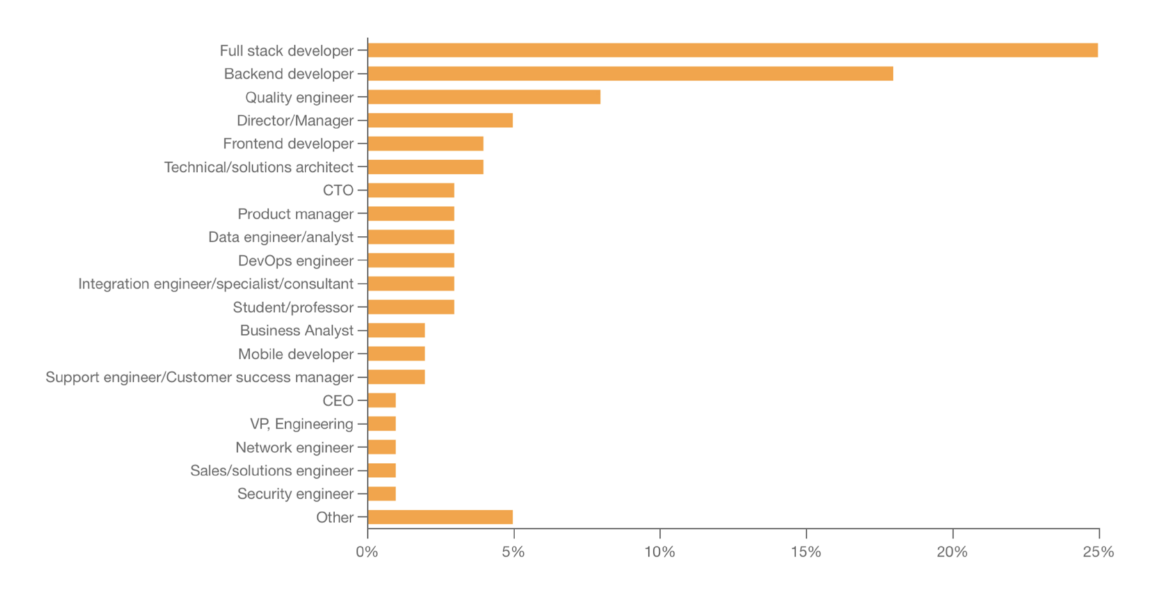


Primary job function

The influx of non-developers into the API world is accelerating. In 2023, 53% of the people who took our survey were non-developers. That's up from 50% in 2020.

This year, we saw increased representation by chief technology officers, managers, and directors, to name a few non-developer roles.

Developers still comprised the largest percentage of respondents, whether they were full-stack, backend, or frontend. But over 21,000 non-developers were generous enough to share their opinions. We're grateful for their—and everyone's—input into the 2023 State of the API survey.

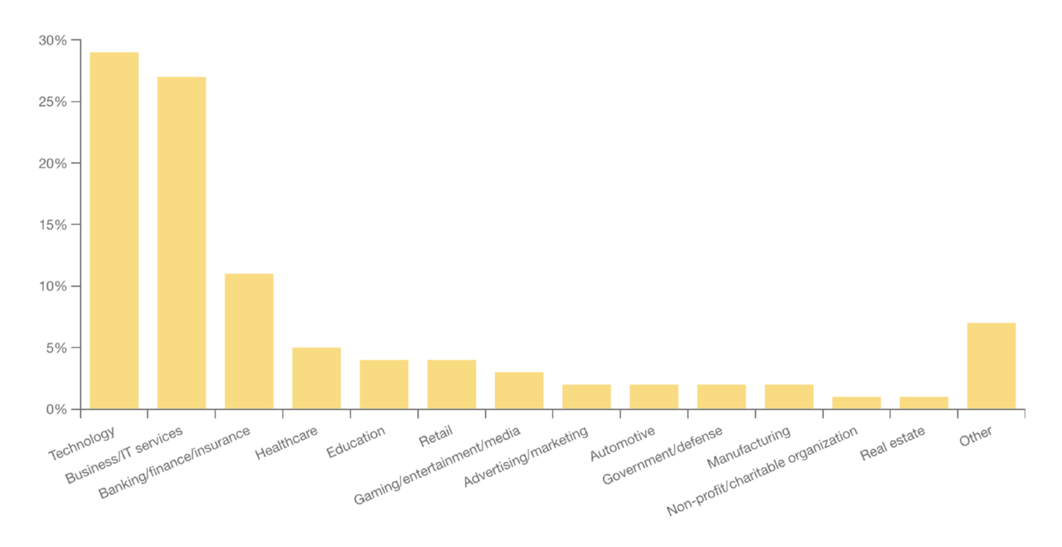


Due to rounding, percentages may not add up to 100%.



Industry

We asked about individuals' industries, and the results were clear: Technology remains the most represented sector, followed by business/IT services, financial services, and healthcare.



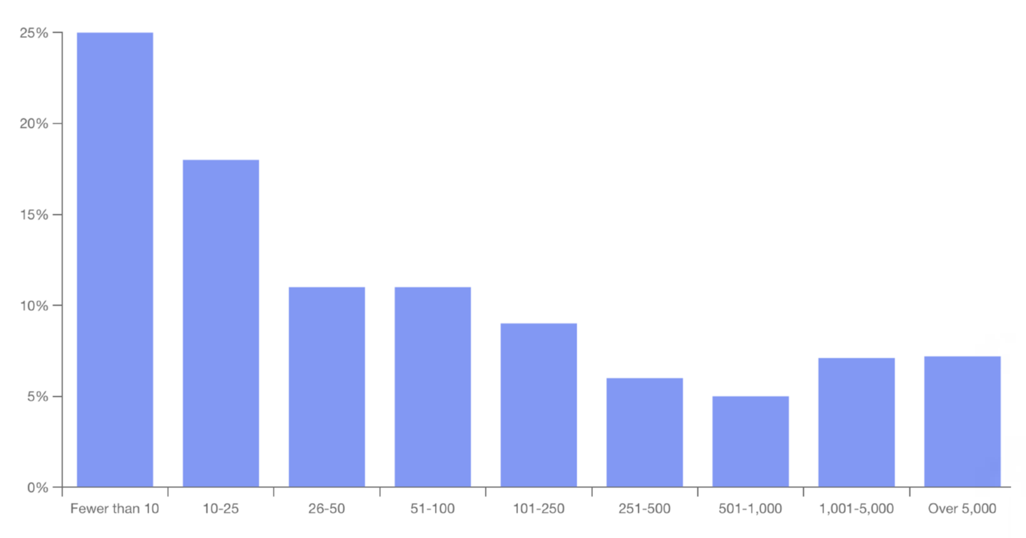
Due to rounding, percentages may not add up to 100%.

Number of developers in the organization

In past surveys, we've asked, "How many developers are in your organization?" The most common answer has always been "More than 500."

This year, we wanted to know more about this segment. Just how many developers were we talking about?

What we discovered surprised us. Once you get above 250 developers, the most common company size in our survey were ones with thousands of developers. These large organizations are most heavily represented by the financial services, tech, and automotive sectors.



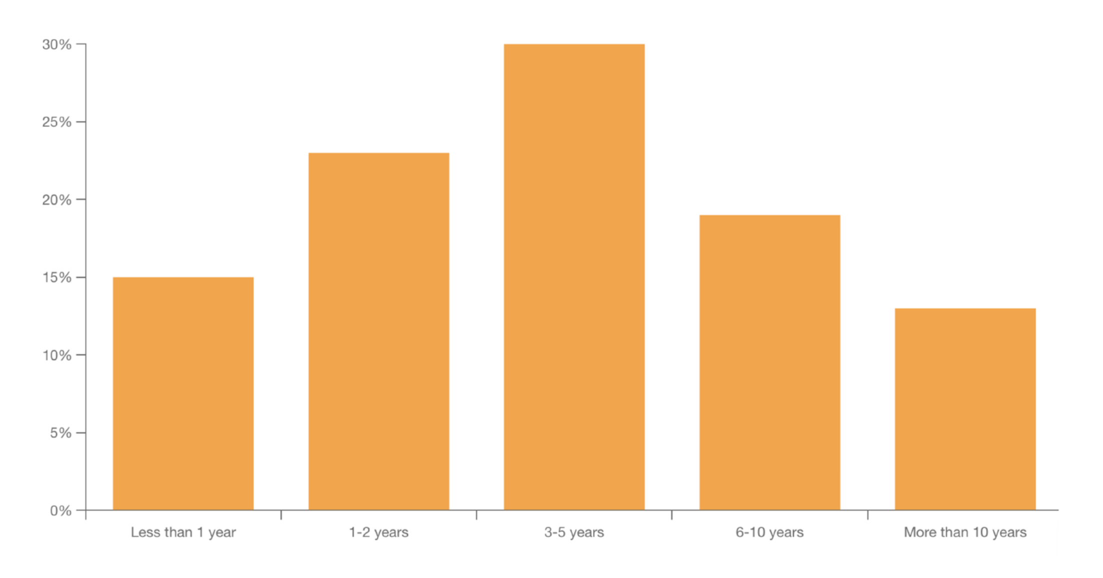
Due to rounding, percentages may not add up to 100%.



Years of experience

We asked how many years of API development experience people had. Like last year, the most common answer was three to five years.

The share of people working with APIs for the first time remained steady this year, after jumping last year. One in seven people had less than a year of API development experience, but certain professions had an even higher share of newcomers. About one in three business analysts, network engineers, and UX/UI designers had less than a year of API experience.

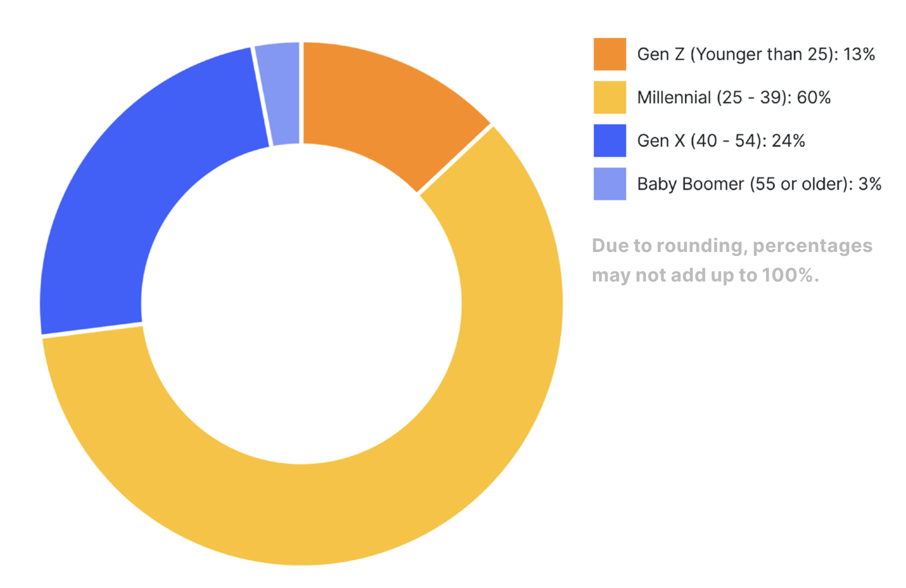


Due to rounding, percentages may not add up to 100%.

Generation

The bulk of survey respondents this year again identified themselves as Millennials, followed by Gen X, Gen Z, and finally, Baby Boomers.

All job functions are predominantly performed by Millennials, with the exception of CIO roles. Fifty-seven percent of survey-takers in this role are members of Gen X.



Due to rounding, percentages may not add up to 100%.



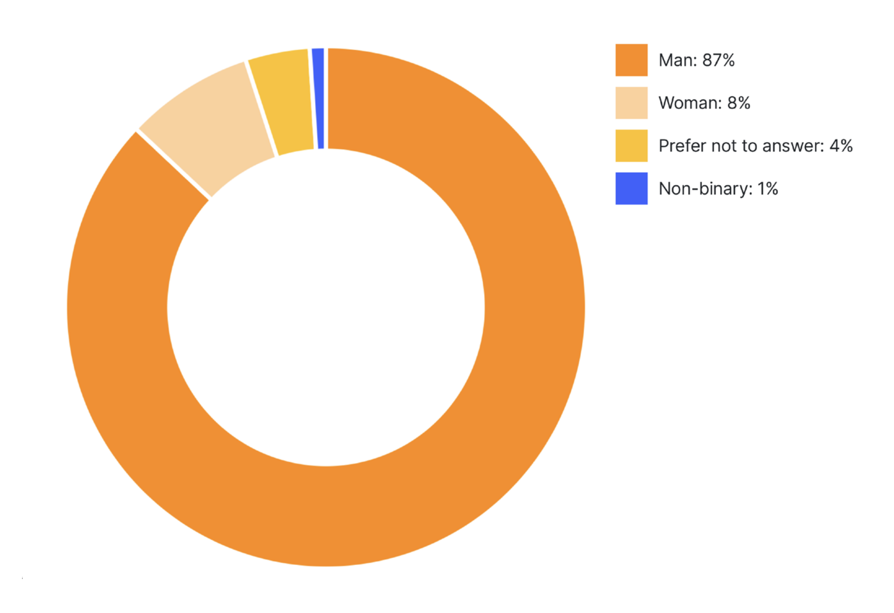
Gender

Like much of the tech sector, the world of API professionals skews male. Eighty-seven percent of all survey-takers were men, while 8% were women. The remainder were non-binary or chose not to answer.

Some tech roles had a greater share of women than 8%. Women made up 30% of technical writers, 16% of quality engineers, and 15% of business analysts in our survey.

What role was rarest among women? Chief technical officer. Just 1% of the 1,200 CTOs in our survey were women. CEOs had a higher share of females at 5%.

The gender disparity in tech has been persistent, both in our yearly surveys and as measured elsewhere. It underscores the need for investments, from early STEM education through workplace programs that support women in the highest ranks of tech.



A day, week, or year in the life





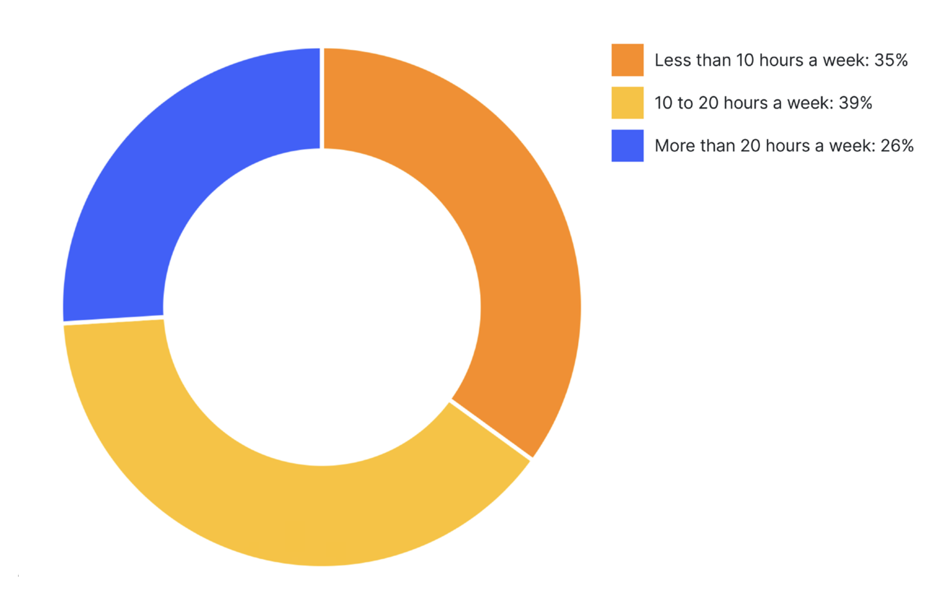
A day, week, or year in the life



Hours spent with APIs

When it comes to measuring time spent working with APIs, the figures on 2023's chart are similar to last year's: 26% of respondents spend over 20 hours a week working with APIs.

When we drill down, though, we can see that people in one industry spend more time than others: financial services. There, 32% of respondents spend over 20 hours a week working with APIs.





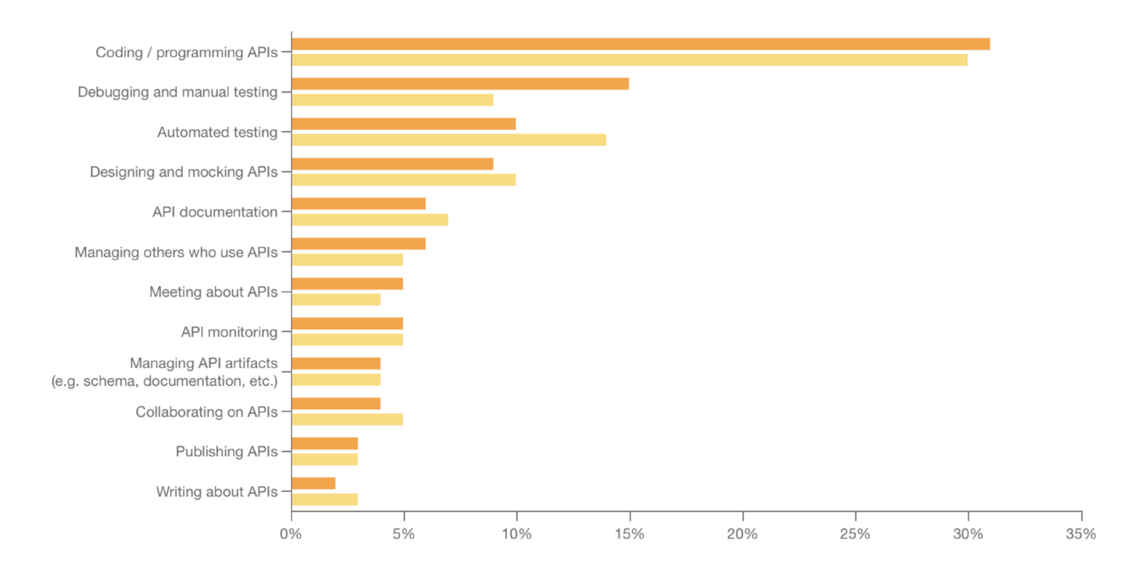
API time: present and ideal state

We asked how people spend their time working with APIs, and how they'd prefer to allocate that time. The biggest portion of their API time—an average of 31%—is spent coding, which matches their ideal state.

Time spent coding APIs seems to have an inverse relationship with company size. For example, people in organizations with fewer than 10 developers spend a greater-than-average 37% of their API time writing code.

But as the number of developers grows, people spend less of their API time coding. The 37% figure drops to a below-average 28% once an organization hires more than 50 developers. And it stays at 28% all the way up through mega-companies with over 5,000 developers.

Why is this? One reason may be that as development teams grow and projects scale up, more product managers and project managers are needed. Larger teams can require more meetings, which may leave less time for coding.



Multiple choices allowed.

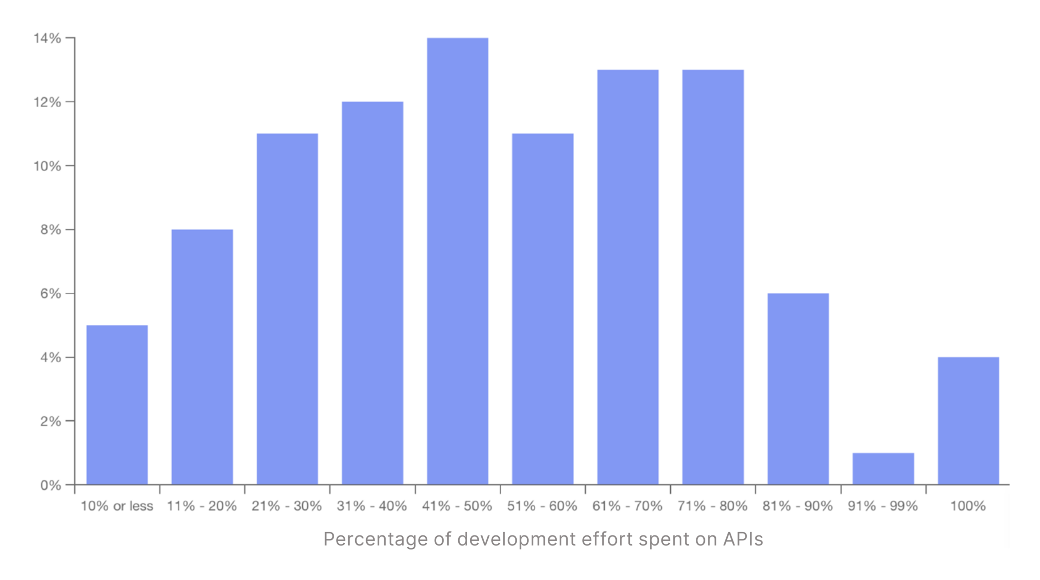


API development effort

Overall, 49% of respondents said most of their organization's development effort was spent working with APIs. That number can vary, depending on the industry.

In financial services, 57% of respondents said most of their organization's development was focused on APIs, the highest number in the survey.

At the other end of the spectrum was manufacturing, where only 34% of respondents said a majority of their company's development efforts were spent working with APIs.



Due to rounding, percentages may not add up to 100%.

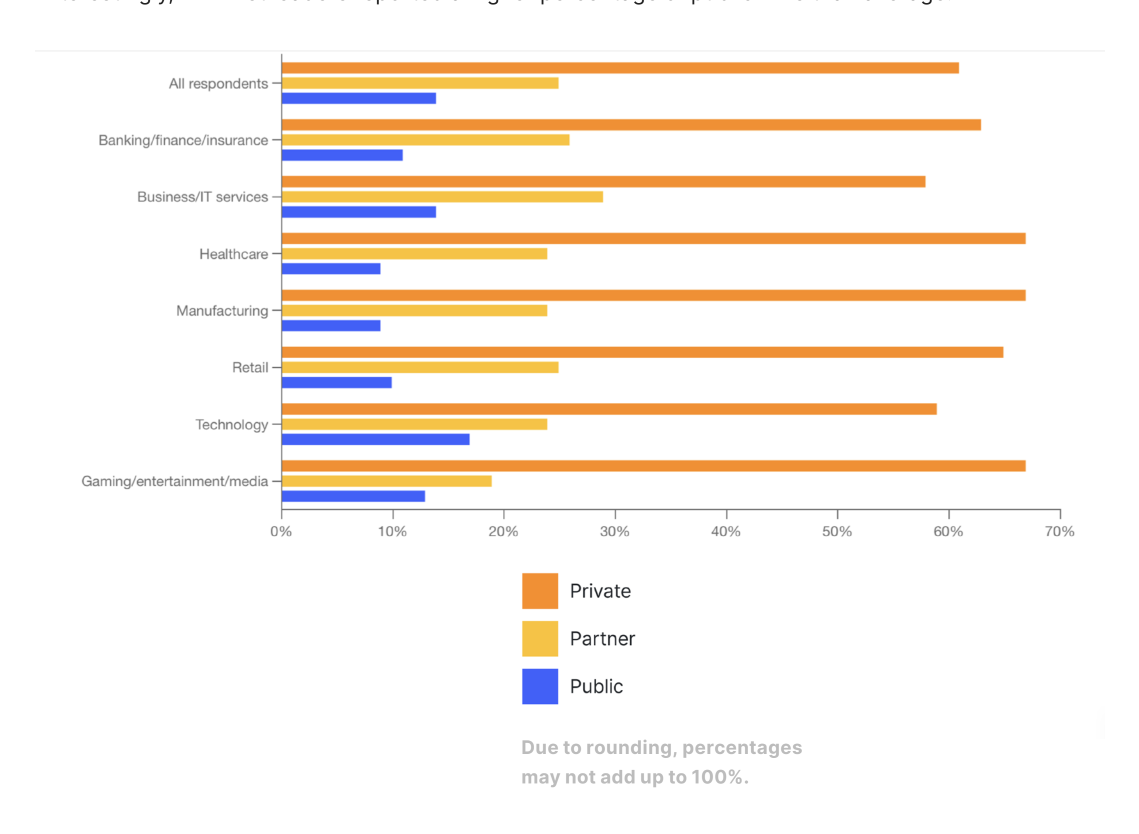


Public, private, or partner

We asked respondents what percentage of their APIs were public, private, or partner. For the first time in three years, organizations are adding private APIs at a faster rate than public and partner APIs. Sixty-one percent of businesses' APIs are for internal use only, up from 58% in each of the prior two years.

The emphasis on private APIs underscores the need for tools that help teams catalog, document, and collaborate on their internal APIs.

Meanwhile, public APIs constituted a smaller share this year, at 14% of organizations' APIs. Interestingly, API-first leaders reported a higher percentage of public APIs than average.



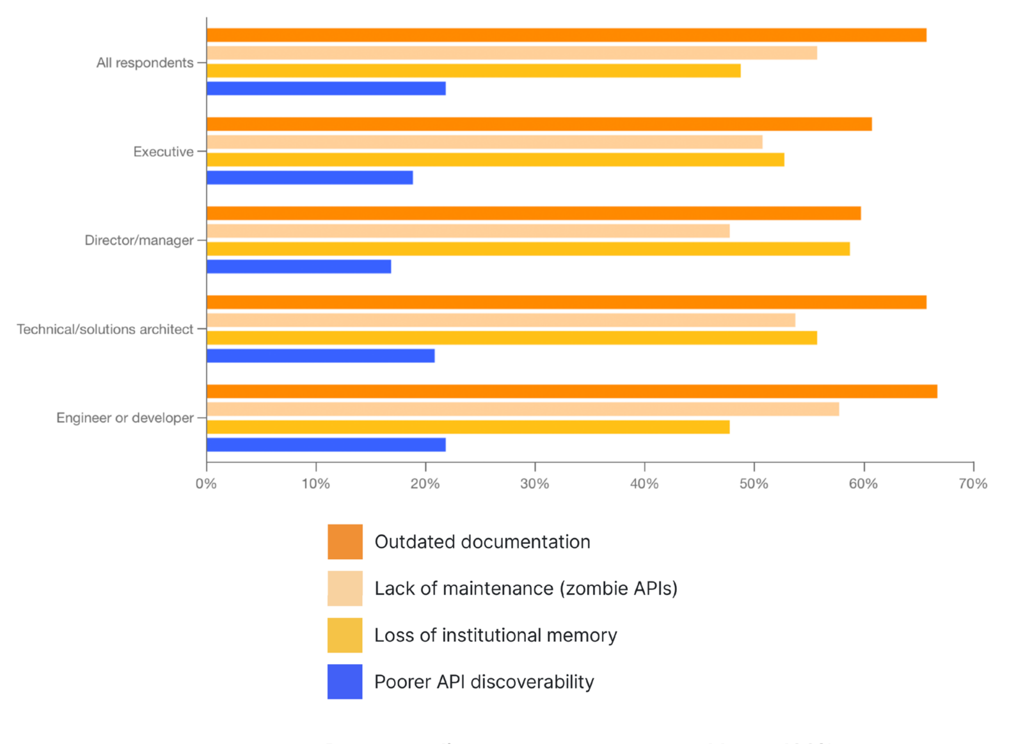
Due to rounding, percentages may not add up to 100%.



When developers leave

When API developers leave, what are the top concerns for an organization? Respondents told us the biggest issue by far is outdated documentation. This finding dovetails with data elsewhere in the survey. For example, lack of documentation is cited as the primary obstacle to consuming an API.

The second biggest concern when developers leave is zombie APIs. These APIs have no owner, oversight, or maintenance—and are sometimes forgotten by the company. At worst, zombie APIs pose a security risk; at best, they deliver a poor consumer experience.



Outdated documentation

Lack of maintenance (zombie APIs)

Loss of institutional memory

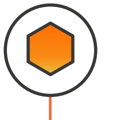
Poorer API discoverability

Due to rounding, percentages may not add up to 100%.

> "Didn't even think about that 'zombie APIs' one until now, so...thanks? Sigh...one more sleepless night for me...LOL."
>
> **Survey respondent**

API-first and other strategies





API-first and other strategies



Embracing API-first

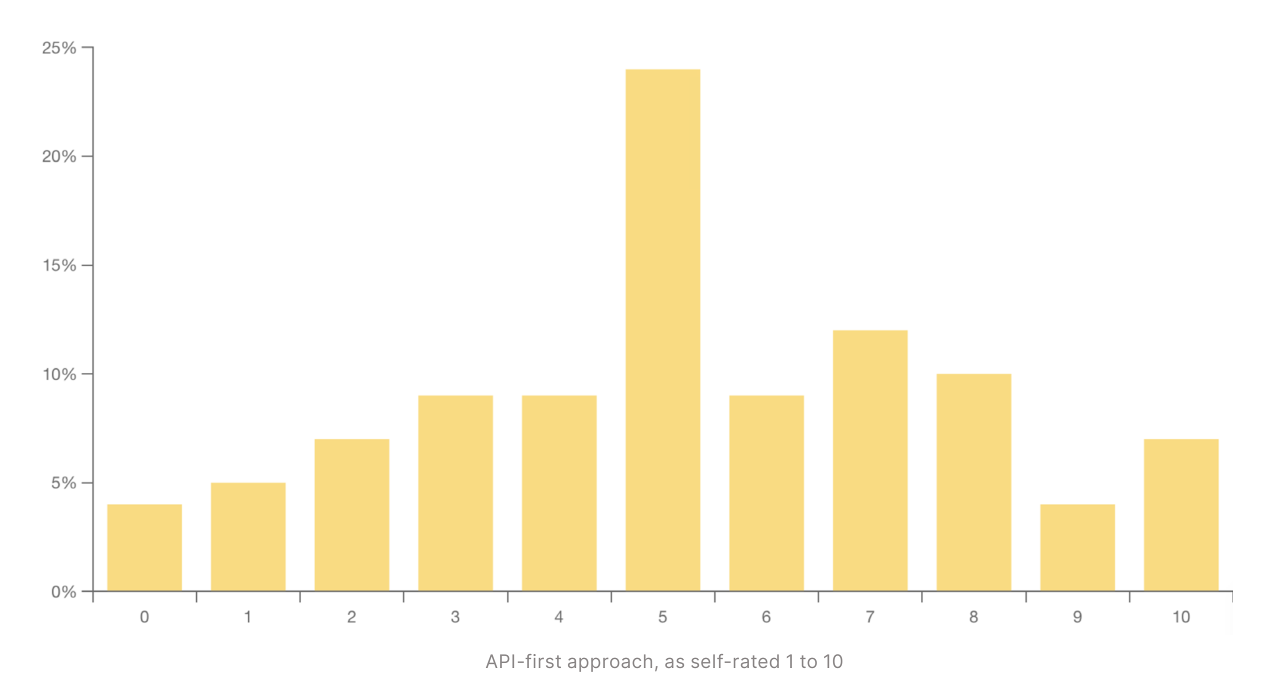
This year, more respondents embraced a thorough API-first approach to development: 11% ranked themselves as highly API-first. That's up from 8% in each of the prior two years.

We call this group "API-first leaders." They rate themselves a 9 or 10 on a 10-point scale.

What characterizes an API-first approach? It prioritizes APIs at the beginning of the development process, positioning APIs as the building blocks of software. This involves developing APIs before writing other code, instead of treating them as afterthoughts.

What are the benefits of being an API-first leader? As discussed elsewhere in this report, this elite group produces APIs faster and encounters fewer failures than average. And when an API does fail, these leaders can restore it faster—usually in under an hour.

While 11% of all respondents were API-first leaders, their representation rose with company size. At companies with 1,000 developers or more, 15% of respondents rated themselves API-first leaders. Among industries, financial services had the highest API-first representation, also at 15%.



Due to rounding, percentages may not add up to 100%.



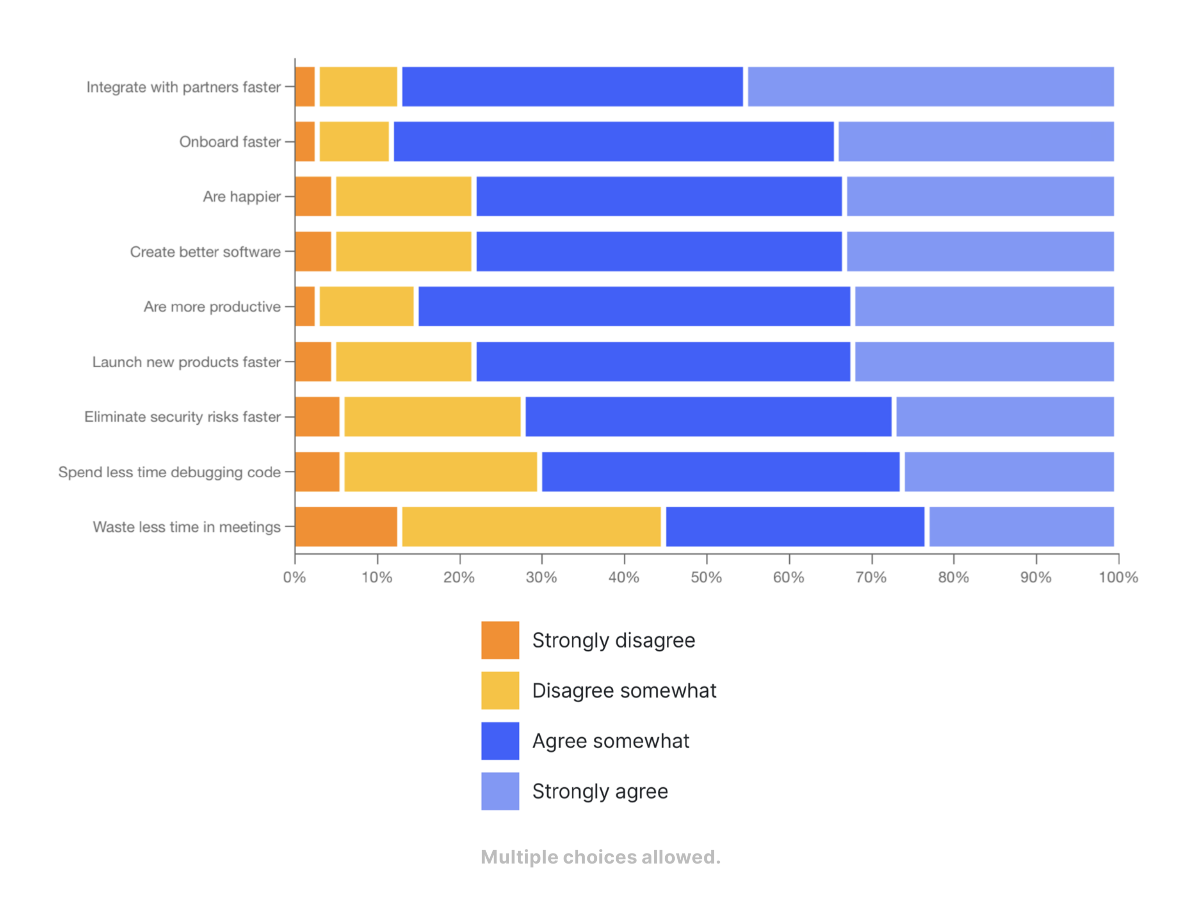
It pays to be API-first—especially if you're scaling up

We asked about the benefits of an API-first approach to development. Over 75% of respondents somewhat agreed or strongly agreed that developers at API-first companies are more productive, create better software, and integrate faster with partners.

When we drilled down into the results, we found that the benefits of API-first become more apparent as a company adds developers.

At small companies with 100 developers or fewer, 32% of respondents strongly agreed that API-first companies onboard faster. But as developer headcount rose above 100, that figure steadily climbed.

By the time a company reached 5,000 developers, 42% of its respondents strongly agreed with the statement. We see similar increases across almost all metrics when answers are sorted by company size.



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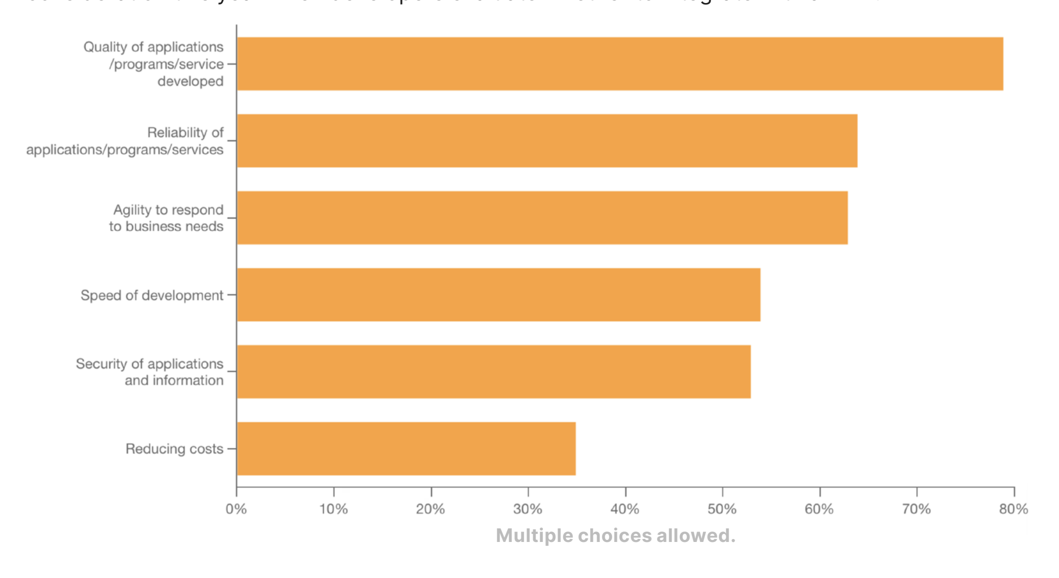


Development priorities

We asked respondents to identify the priorities for their development teams and organizations. The number one choice this year remained the quality of applications, programs, or services developed, cited by 79% of survey-takers. Reliability, agility, and security were the next most important priorities.

“Reducing costs” remained low on the list, but 35% of survey-takers indicated that it was important this year, compared with 31% last year.

This focus on costs is reflected elsewhere in the survey. For instance, pricing is a stronger consideration this year when developers evaluate whether to integrate with an API.



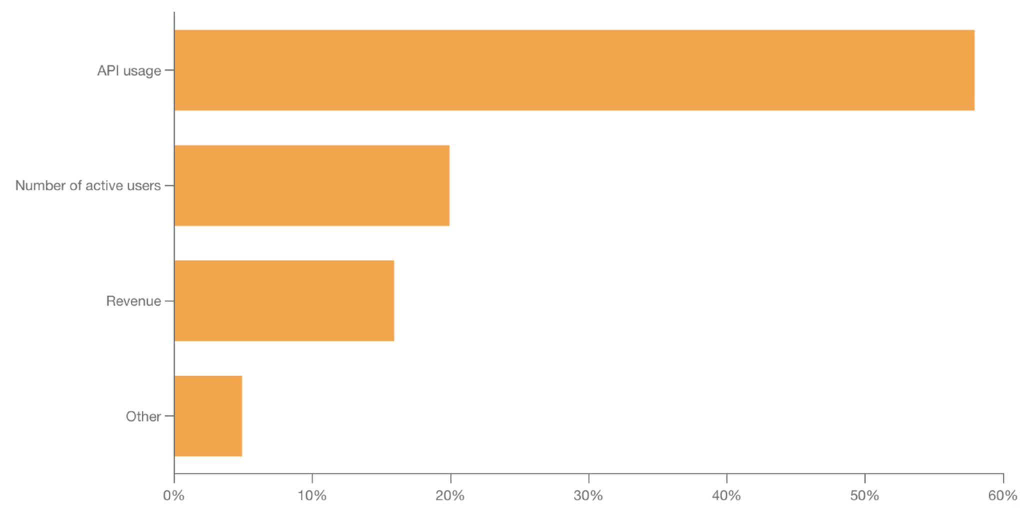
Multiple choices allowed.

Measuring success of public APIs

We asked how people measure the success of their public APIs, and the top answer was API usage. After that, the answer depended on the respondents’ job role and industry.

For executives, directors, and managers, the second-best indicator of public API success was revenue. For engineers and developers, it was the number of active API users.

The number of active API users was also chosen as the second-best measure of success across industries, with three exceptions: financial services, retail, and advertising. There, API revenue was considered the second-most important metric.



Due to rounding, percentages may not add up to 100%.

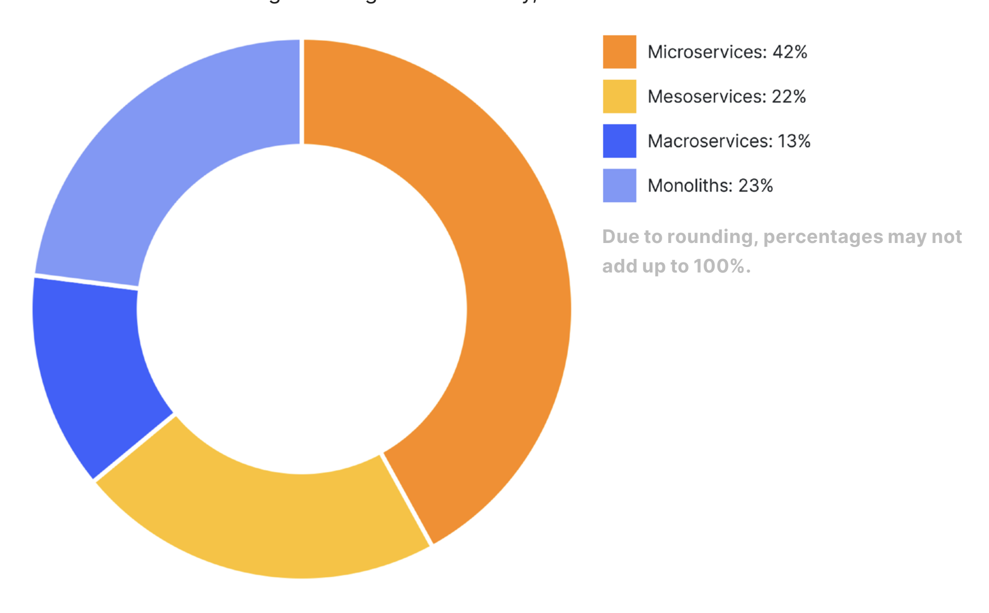


Microservices, monoliths, and in between

When asked to categorize the architectural style of APIs in their organization's portfolio, respondents said microservices were the dominant share at 42%.

After that, monoliths and "mesoservices"—right-sized API services—each represented a little over 20% of organizations' services.

Additionally, survey-takers said more than 10% of APIs at their organization powered microservices that had grown large and unwieldy, which we have termed macroservices.



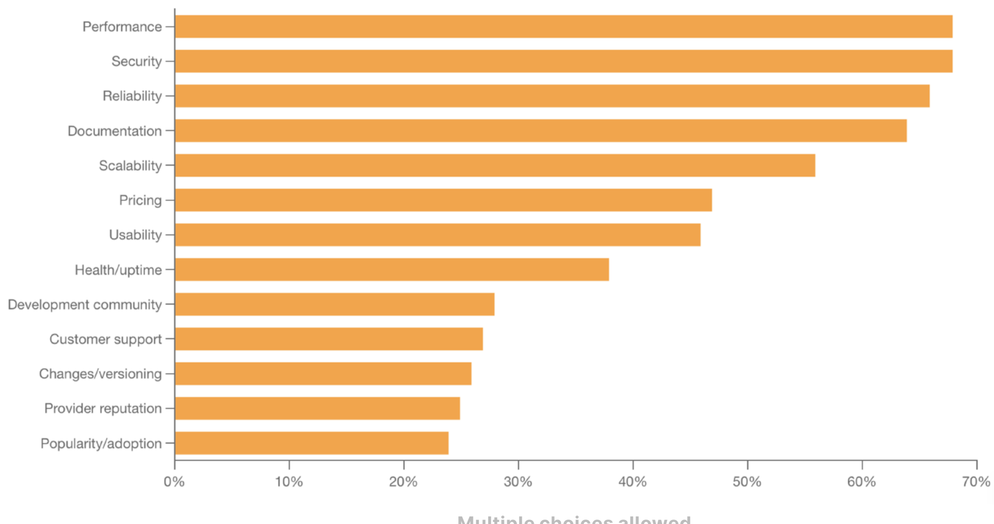
Due to rounding, percentages may not add up to 100%.

API integration: Price is a growing concern

What factors do people evaluate before integrating with an API? Respondents said performance and security were the top two factors, as they were last year.

But one factor saw a jump in importance this year: pricing. It was cited as a consideration by 47% of respondents. That's up from 41% in each of the past two years.

This focus on price may reflect a more cost-conscious API consumer in the wake of tech's economic contraction. Executives were particularly likely to say pricing is important, with 60% citing it as a factor to consider before integrating with an API.



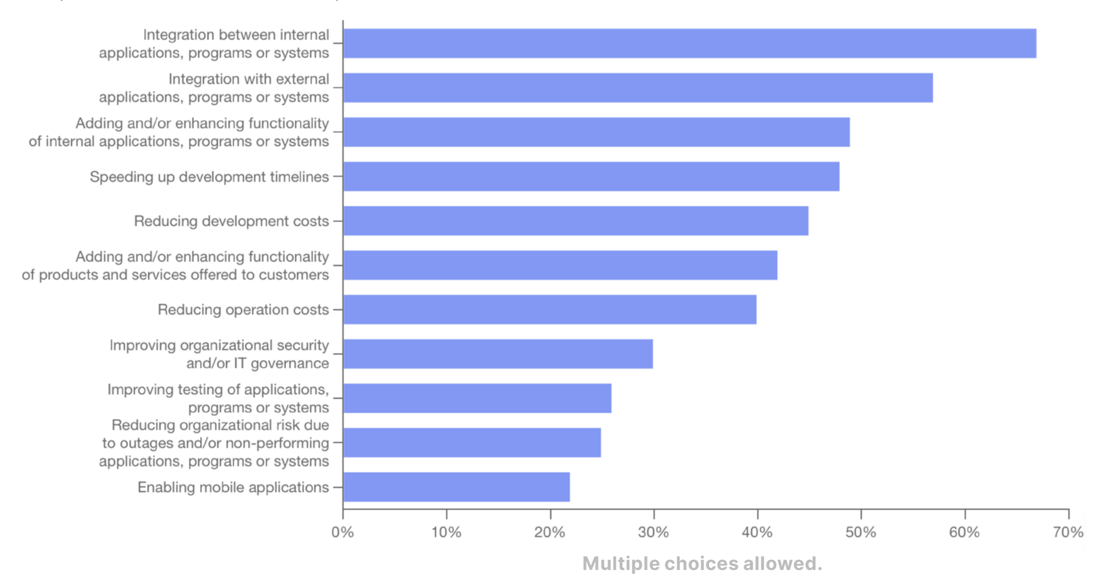
Multiple choices allowed.



Consuming APIs: internal integration is key

What factors go into an organization's decision to consume an API? For a second year, the most popular answer was how well the API integrates with internal apps and systems. It was chosen by 67% of respondents.

In manufacturing, internal integration was cited more often than in any other sector: 73% of respondents there called it important.

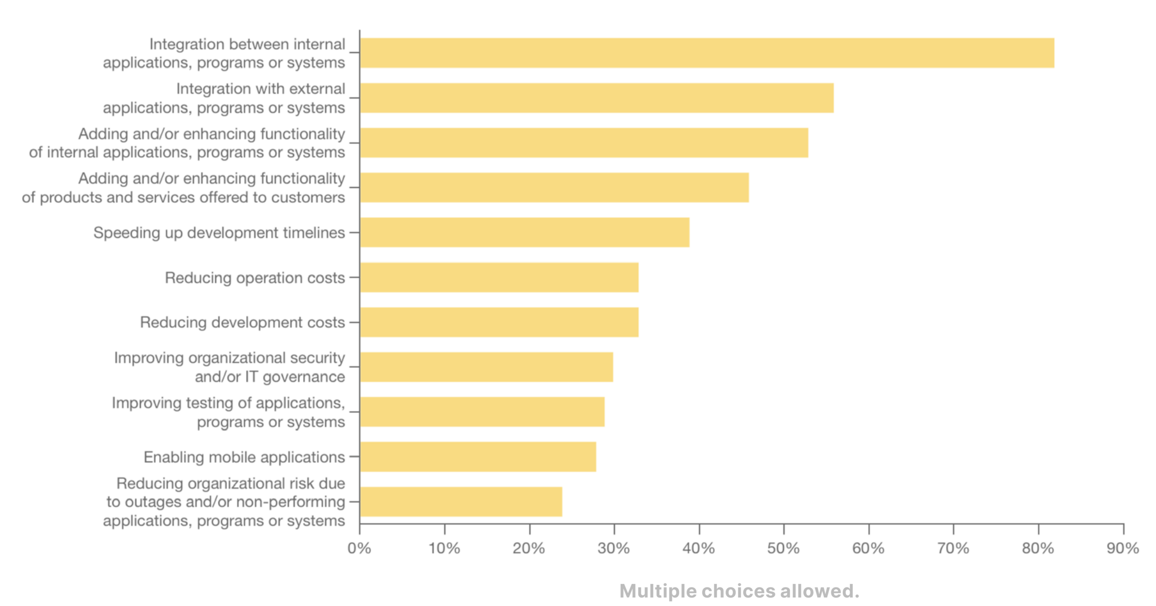


Producing APIs: internal integration is paramount

What factors do organizations consider when evaluating whether to produce an API? Integration with internal apps and systems was by far the top choice, for a second year.

That makes internal integration the top consideration when both producing and consuming an API. This priority has implications for API design and documentation, as well as the full development lifecycle.

For almost all industries, the second-most important consideration when producing an API was integrating with external apps and systems. The exception was the gaming, entertainment, and media sector. There, the second-most important consideration was the ability to add functionality to internal apps and systems.



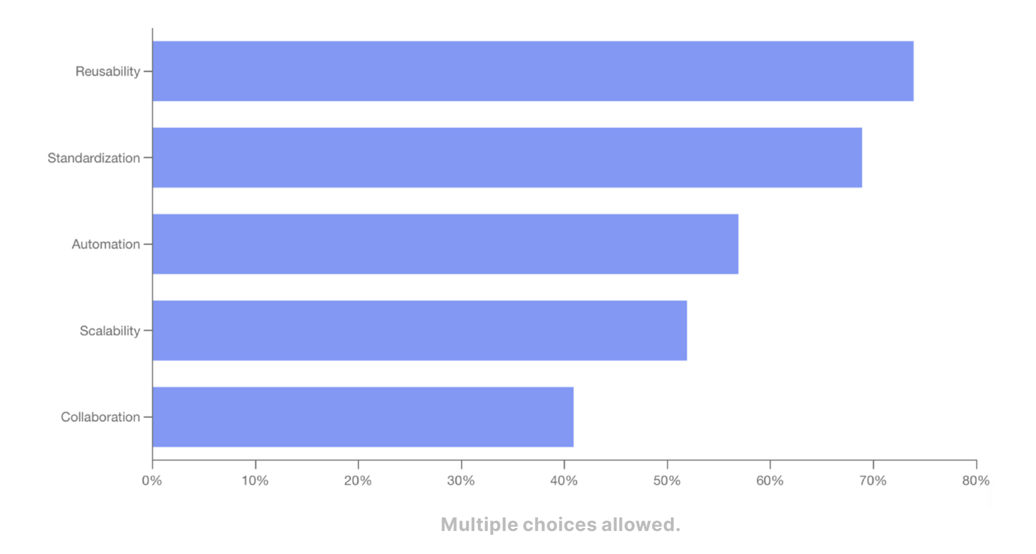


'Doing more with less'

Over 200,000 U.S. tech jobs have been lost since the start of 2023, and the largest share of those has been in software developer roles. Many teams are expected to do more with less. We wanted to know: can APIs help achieve this goal?

Respondents told us yes. Almost three-fourths said APIs allow them to leverage existing code rather than build an app from scratch. More than half cited APIs' automation abilities, including scheduling and triggering specific events and setting tasks and workflows into motion.

The more developers a company had, the likelier respondents were to acknowledge APIs' ability to help developers do more with less.



Multiple choices allowed.

Executing on APIs





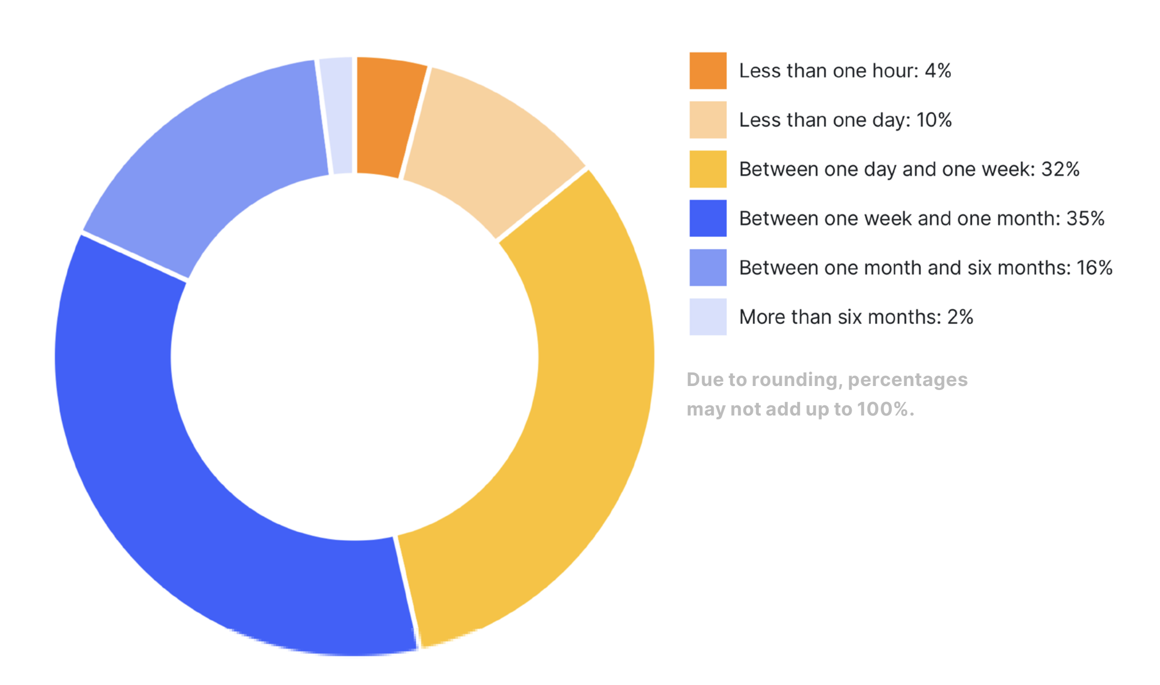
Executing on APIs



Time to production

We asked survey participants how long it typically takes to conceive, implement, test, and deliver an API to a production environment. The results were largely unchanged from last year.

Some industries were faster at producing APIs than others. In education, 18% of respondents said they required a day or less. In financial services, only 11% of survey-takers said the same.

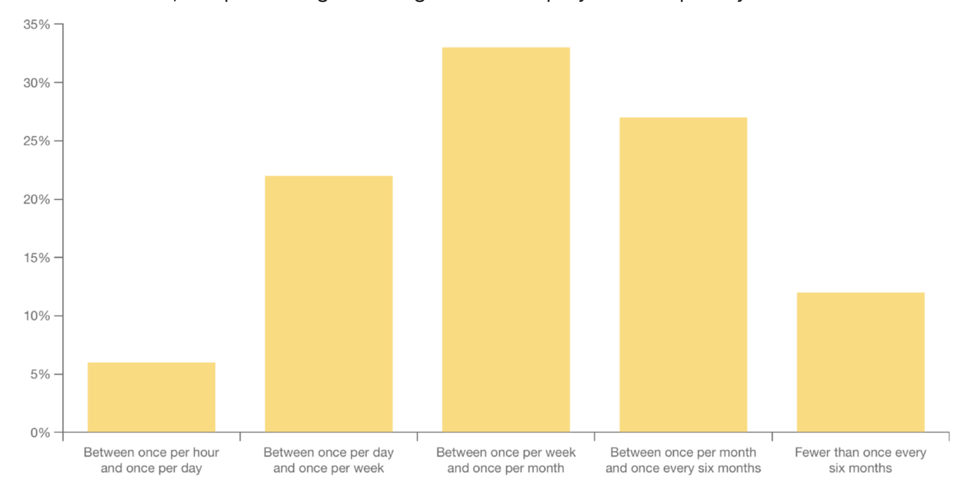




Deployment frequency

We also asked participants how frequently they deploy APIs to production. The most common response? One-third said they deploy between once a week and once a month.

Just 6% of respondents deployed between once per hour and once per day. But among API-first leaders, the percentage was higher: 10% deploy that frequently.



Due to rounding, percentages may not add up to 100%.

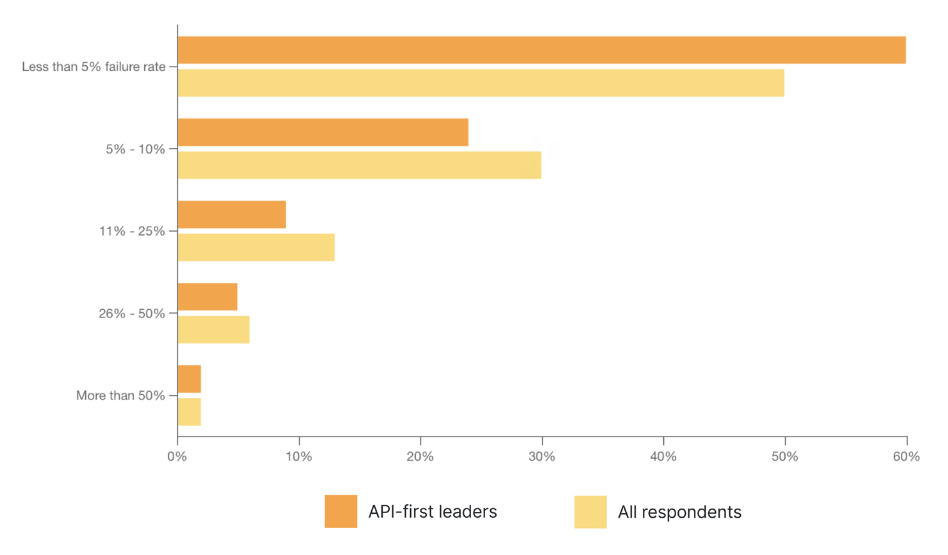
Deployment failures

How often do API changes fail when pushed to production? Not often. Fewer than one in 20 API changes fails, according to half of respondents.

Healthcare claimed the best rate, with 55% of respondents stating that fewer than one in 20 API deployments failed. Education was at the other end of the spectrum; only 43% of respondents there said their failure rate was that good.

Interestingly, education was also the sector likeliest to skip API testing. Eight percent of respondents there said their teams don't test their APIs. That was double the average 4% rate for all respondents.

API-first leaders were less likely to encounter failures than all respondents, with 60% stating that failures occurred less than one time in 20.



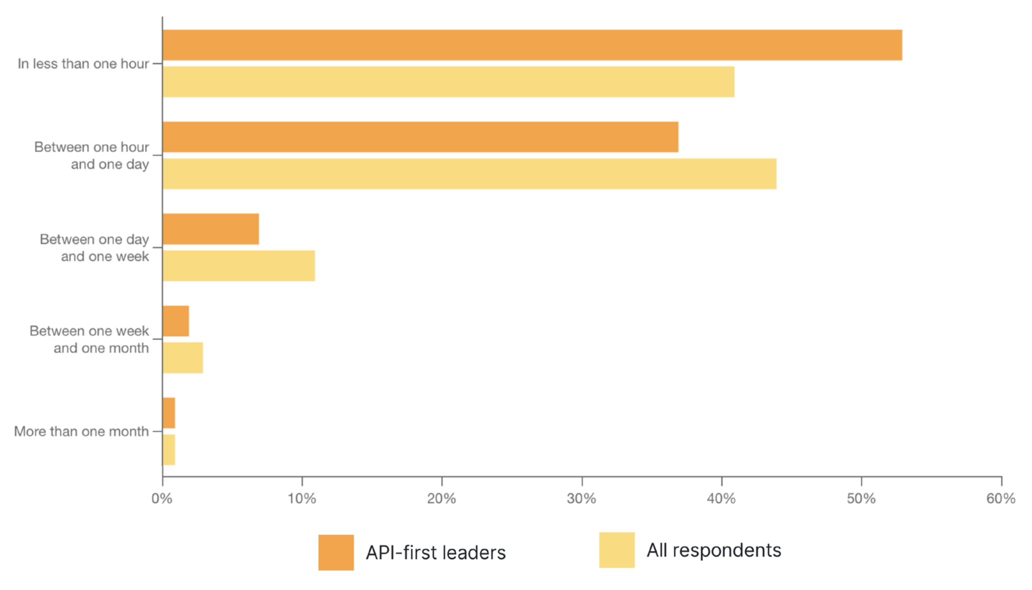
Due to rounding, percentages may not add up to 100%.



Time to recovery

When an API fails, how quickly can it typically be restored? We're happy to say that this figure has improved steadily over the years. Today, 41% say they can restore the API in less than one hour. That's an improvement from 38% last year and 34% the year before that.

API-first leaders reported the fastest recovery times: 53% indicated they could be back up in less than an hour.



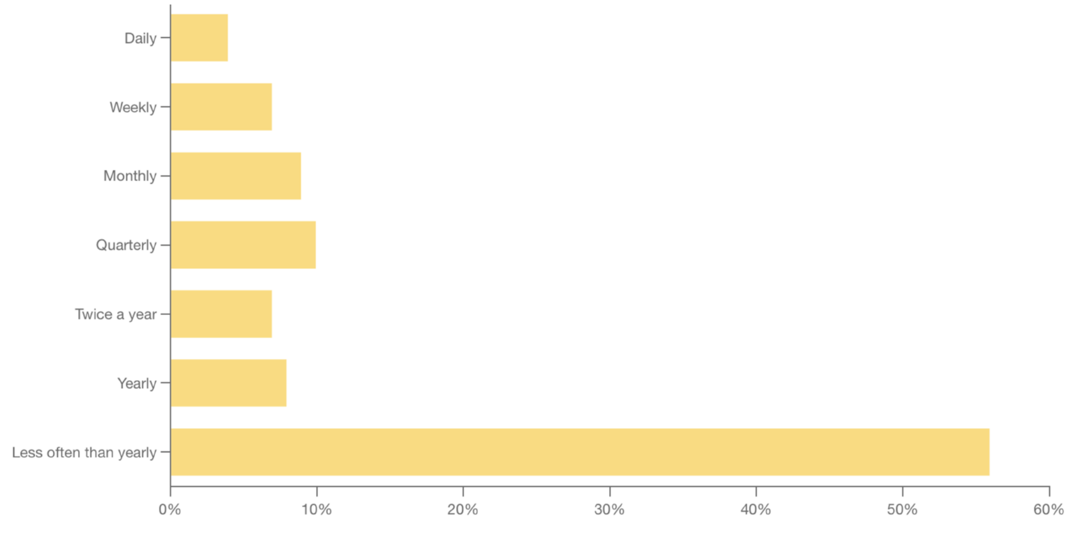
Due to rounding, percentages may not add up to 100%.

Frequency of API security incidents

In 2023, global survey-takers reported fewer API-related security events: 56% said incidents happen less than once a year, an improvement on last year's 52%.

When we break out the results by country, we see some stark differences. Incidents were rarest in the U.S., with 67% of respondents saying API security events occur less than once a year.

In Europe, the Middle East, and Africa, only 57% of respondents could make that claim. In the Asia-Pacific and Latin America, the figure was lower still, with only 47% saying API security events happened less than once a year.



Due to rounding, percentages may not add up to 100%.

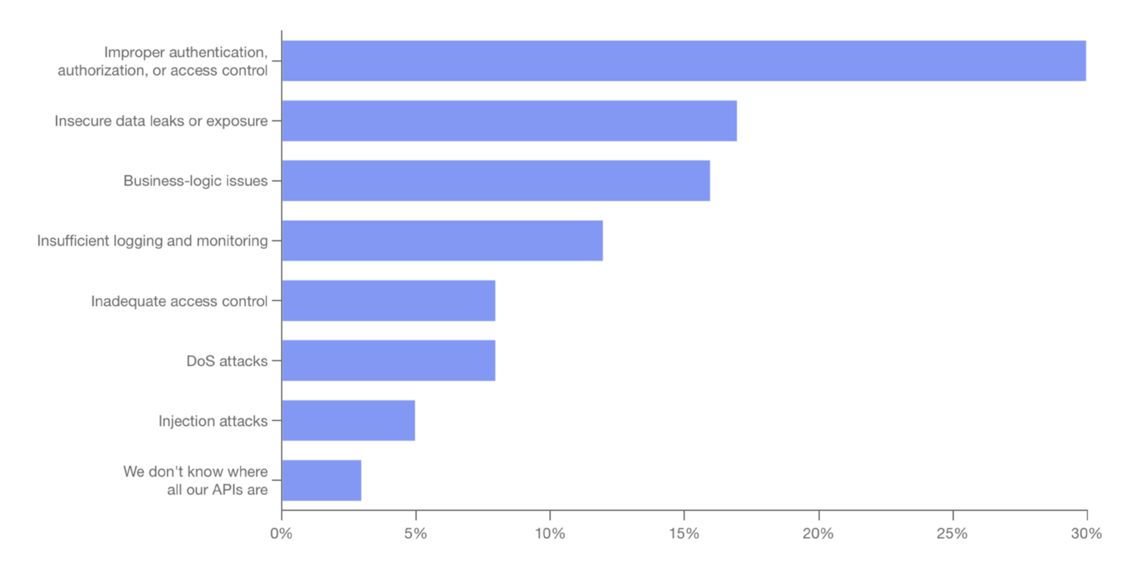


Greatest security risks

We asked respondents to identify which API security risks posed the greatest concern for their organization.

Their top choice was “Improper authentication, authorization, or access control,” cited by an almost two-to-one margin over other risks.

CEOs, CTOs, and developers were aligned on this view, with about 30% of each group acknowledging it as a key hazard. But some job roles were less likely to recognize improper access as a key risk: just 21% of product VPs and 26% of data engineers/analysts cited it as a top concern.



Multiple choices allowed.

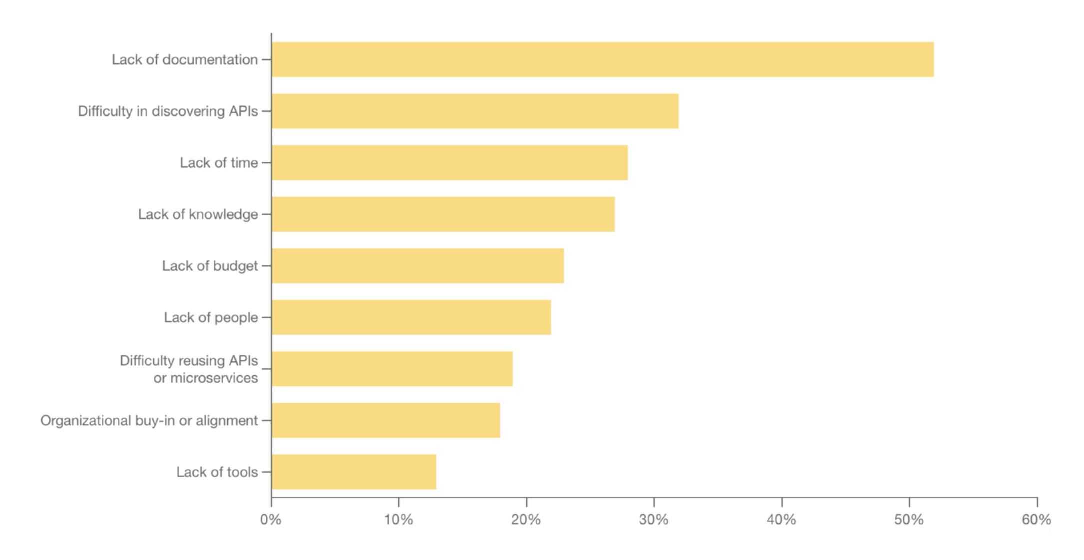
> “The greatest security risk? Humans. Always the largest attack vector.”
>
> **Survey respondent**



Obstacles to consuming APIs

When we asked about obstacles to consuming APIs, 52% of respondents said lack of documentation was the biggest problem. Other top barriers included difficulty discovering APIs (32%) and lack of time (27%).

API-first leaders, on the whole, were less likely to cite any obstacles to consuming APIs—with one exception. They were more likely to mention difficulty reusing APIs or microservices. Twenty-one percent of API-first leaders cited this pain point, compared with just 19% of respondents overall.



Multiple choices allowed.



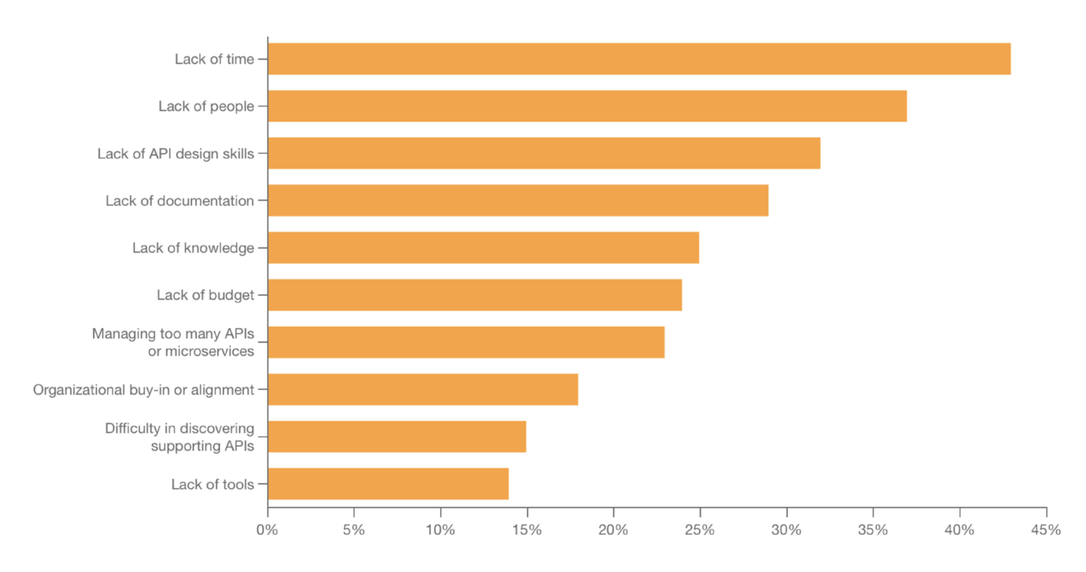
Obstacles to producing APIs: A unique challenge for big companies

In this year's survey, a lack of time and people were again named as the biggest obstacles to producing APIs.

But when we filtered by large companies with over 5,000 developers, a different top problem emerged. Respondents at these mega-companies cited a lack of API design skills as the biggest obstacle to producing APIs.

Interestingly, respondents at these large companies were also more likely to say that "Managing too many APIs or microservices" was an obstacle to producing APIs. Thirty-one percent of these respondents said so, compared with just 23% of all survey-takers.

It's possible the lack of API design skills is making it more difficult to manage APIs and microservices at the largest companies.

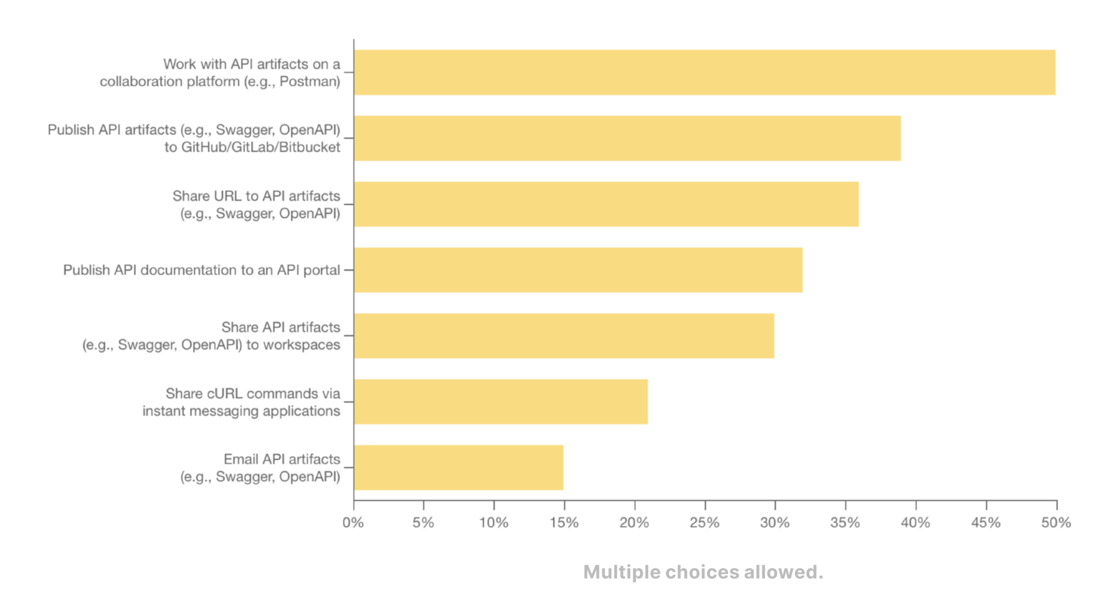


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Collaborating on APIs

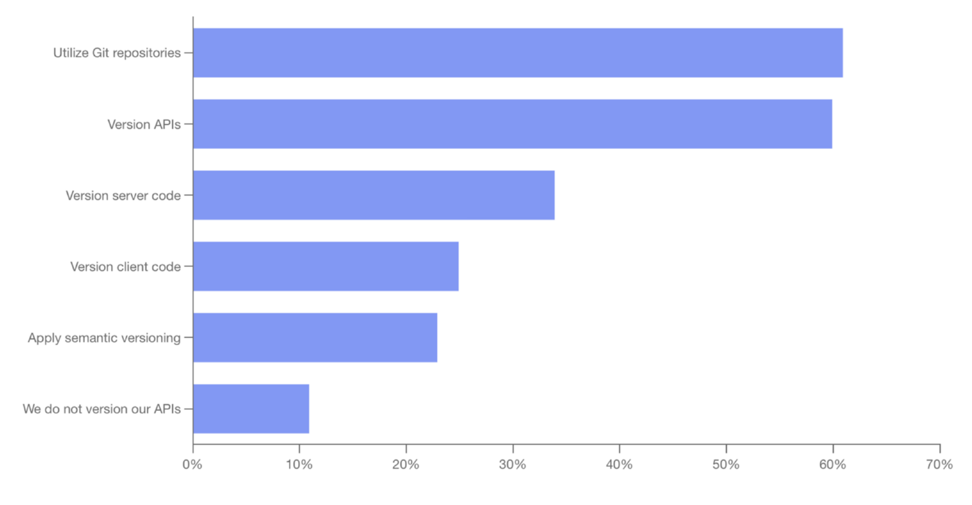
When we asked respondents to cite the different ways they collaborate on APIs, their most common answer was working with API artifacts on a collaboration platform such as Postman (50%). Next up was publishing API artifacts to GitLab, GitHub, or Bitbucket, which was chosen by 39% of respondents.



Multiple choices allowed.

Change management

When it comes to change-management practices, there was a new preferred method: using Git repositories. This practice earned the most mentions in 2023, just edging out versioning APIs, which was the most popular choice in the previous two years.



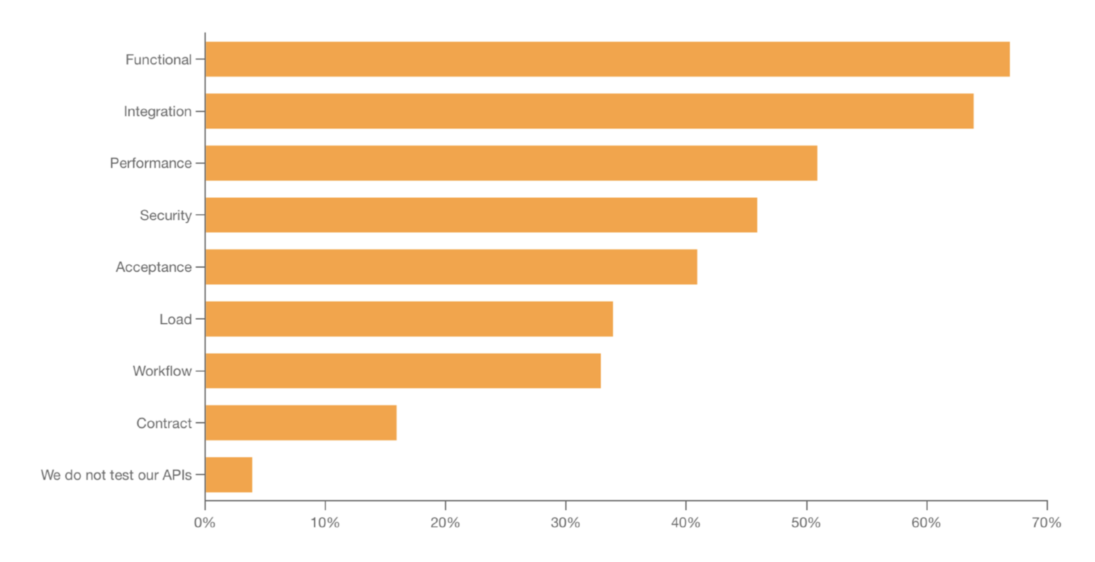
Multiple choices allowed.



API testing

When it comes to API testing, users employed a wide variety of practices, although functional testing (67%) and integration testing (64%) dominated the answers. No other testing practice came within 10 percentage points of those two choices.

As in prior years, one in 25 respondents said their team doesn't test its APIs.



Multiple choices allowed.

APIs and monetization





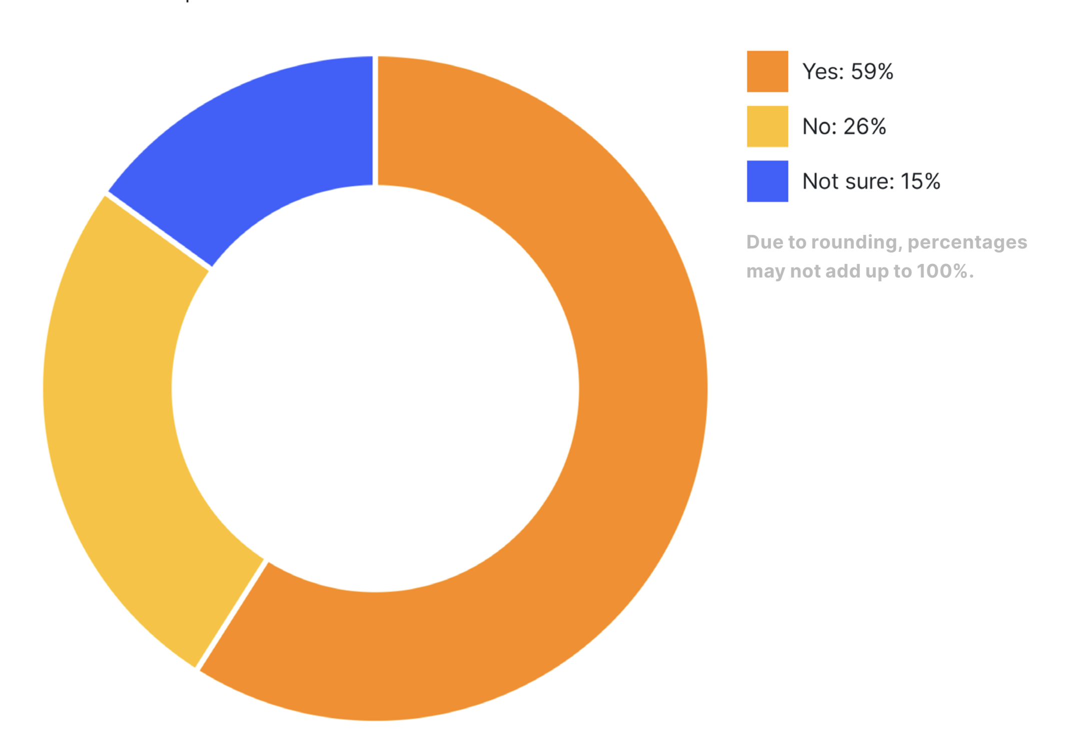
APIs and monetization



APIs as products

We asked for the first time, "Do you view your APIs as products?" Almost 60% of respondents said yes, while 26% said no. A further 15% weren't sure.

Companies with a large developer headcount were the likeliest to view their APIs as products, with 68% answering yes. Among industries, people working in financial services were the most likely to consider APIs products.



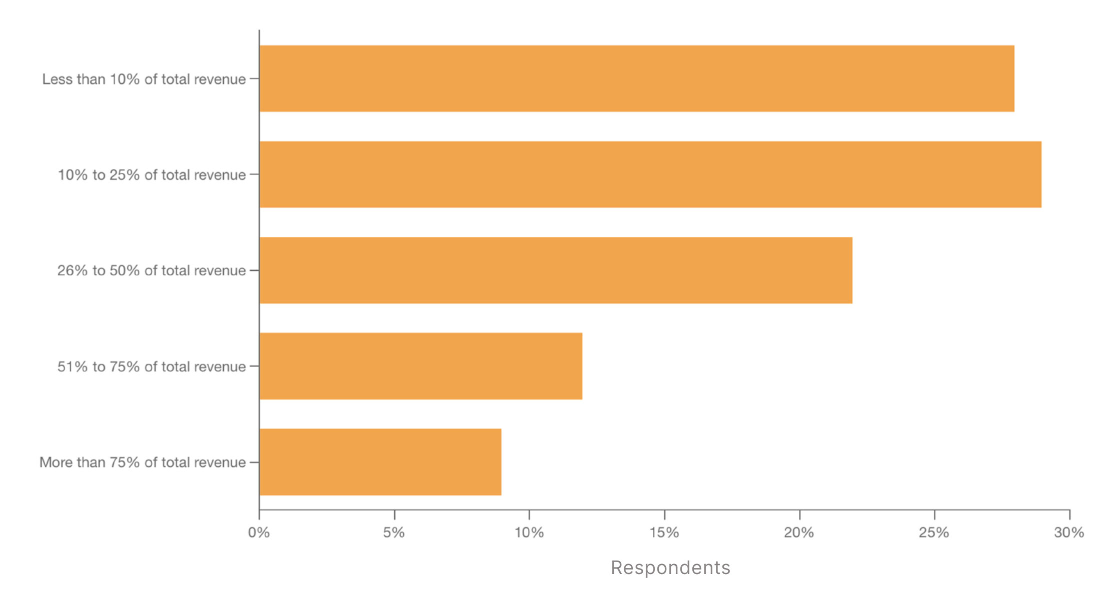


Revenue streams

When asked whether their APIs generate revenue, 65% of respondents said yes. Of those answering in the affirmative, 43% said their APIs generate more than a quarter of the business's total revenue.

For a handful of companies, APIs generated more than 75% of total revenue. These companies were almost twice as likely to be in financial services as other sectors.

The 35% of respondents whose APIs generated no revenue tended to work at smaller organizations. As company size grew (as measured by developer headcount), it was increasingly likely that respondents would say their APIs produced revenue.



Due to rounding, percentages may not add up to 100%.

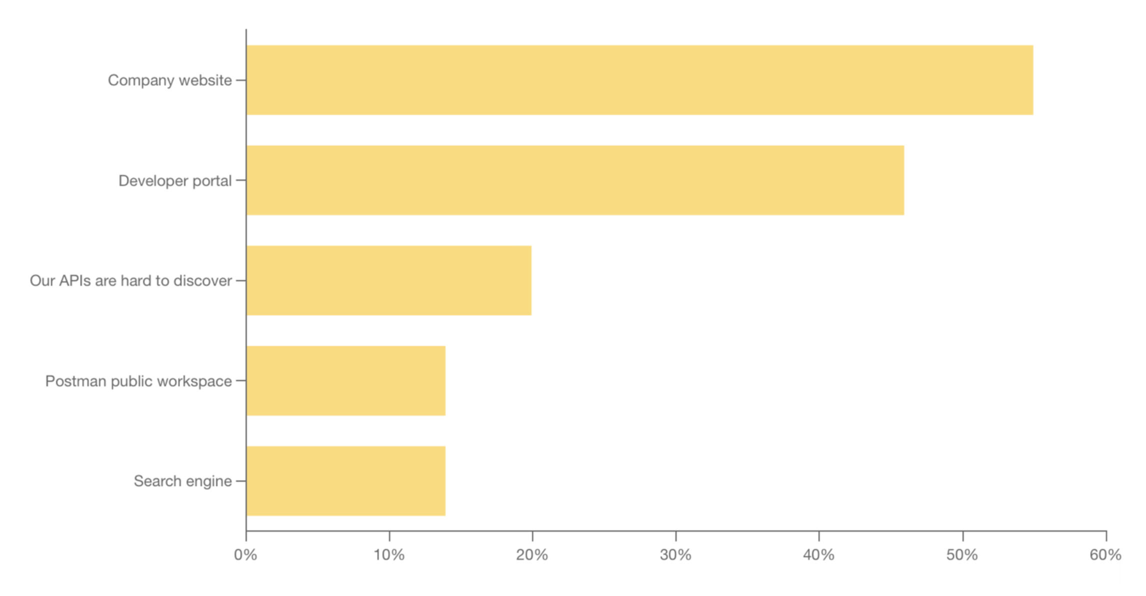


Discovering public APIs

We asked survey-takers how consumers discovered their public APIs. The most common answer was through their website, followed by a developer portal.

When we filtered answers by company size, we found the answer varied. Small companies relied primarily on websites. But as the company size grew beyond 500 developers, developer portals became the top source of API discovery.

What was the third most popular answer? “Our APIs are hard to discover.” This was chosen by 20% of all respondents. This number highlights the importance of focusing on the developer experience and making it easy for consumers to discover one’s APIs, whether through a search engine, company website, or developer portal.



Multiple choices allowed.

APIs and generative AI





APIs and generative AI



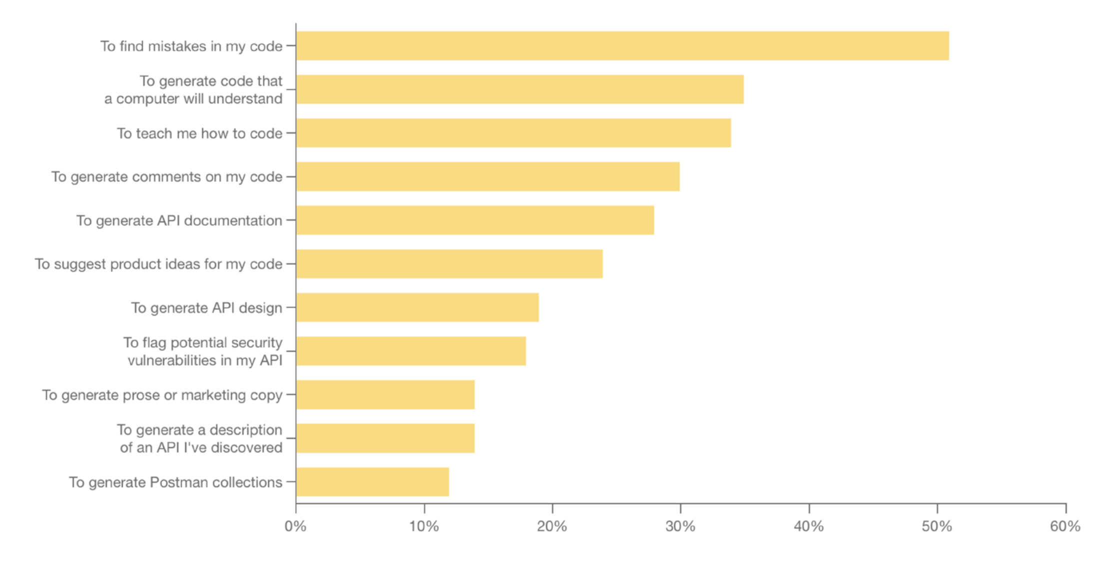
AI as an assistant

We asked survey-takers whether they were using generative AI tools, and if so, how. Sixty percent of respondents said they were employing these tools. The most common uses were finding mistakes in code, producing code, and coding instruction.

Senior API developers were much less likely to use AI tools than junior developers, except to generate documentation and comments. Here, their usage rates were similar.

Among industries, government and defense were least likely to use AI tools, with just 51% of respondents there adopting them. Some respondents cited security risks and corporate bans on sharing data with third-party AI tools.

Education had the highest rate of uptake, with 65% of survey takers there saying they used AI tools.



Multiple choices allowed.

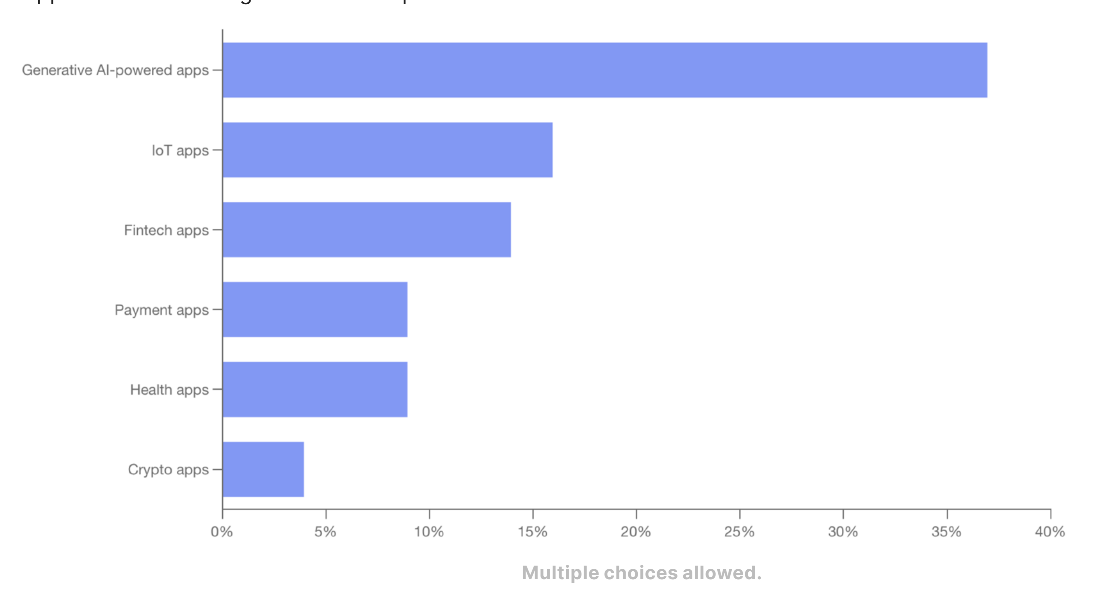


AI-powered apps

What apps are developers most excited about building over the next year? It may come as no surprise that generative AI-powered apps took the top spot. This sentiment was strongest in the education sector.

Internet-of-things apps placed second overall, except in manufacturing. There, IoT apps were viewed equally as exciting as AI apps.

Fintech apps placed third overall, except in financial services, where respondents deemed fintech apps twice as exciting to build as AI-powered ones.

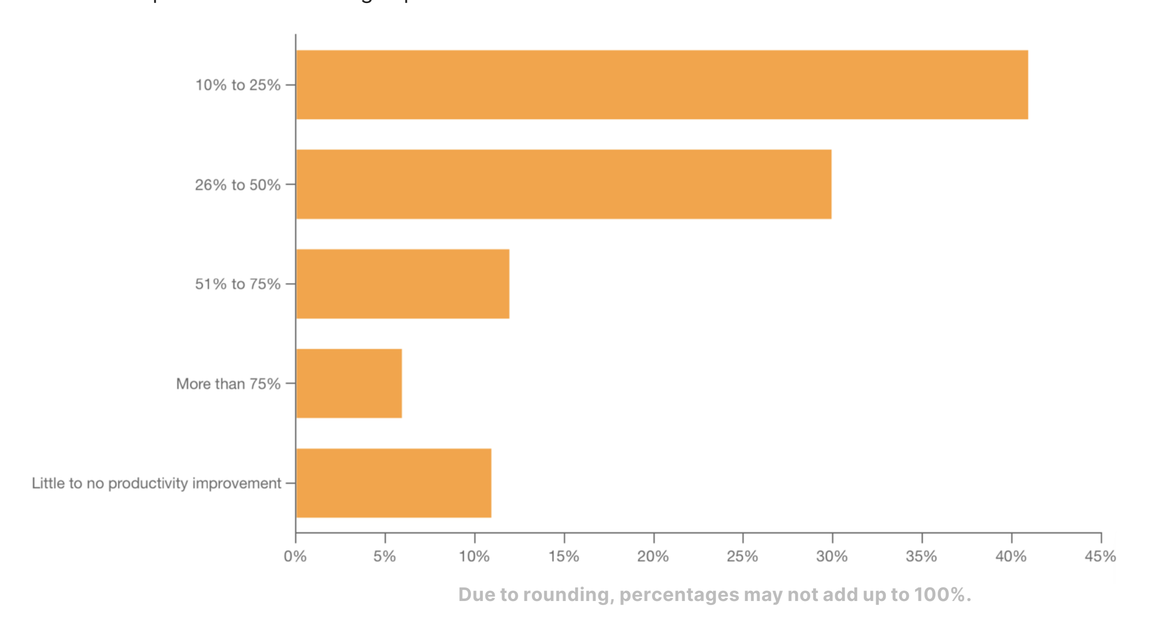


Multiple choices allowed.

AI as a productivity enhancer

What sort of productivity benefit do API professionals expect from tools like ChatGPT and Copilot to deliver to development over the next two years?

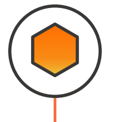
There was wide agreement that AI will deliver a boost in developer productivity, with the largest share of respondents forecasting improvements of 10% to 25%.



Due to rounding, percentages may not add up to 100%.

Tooling for APIs and development





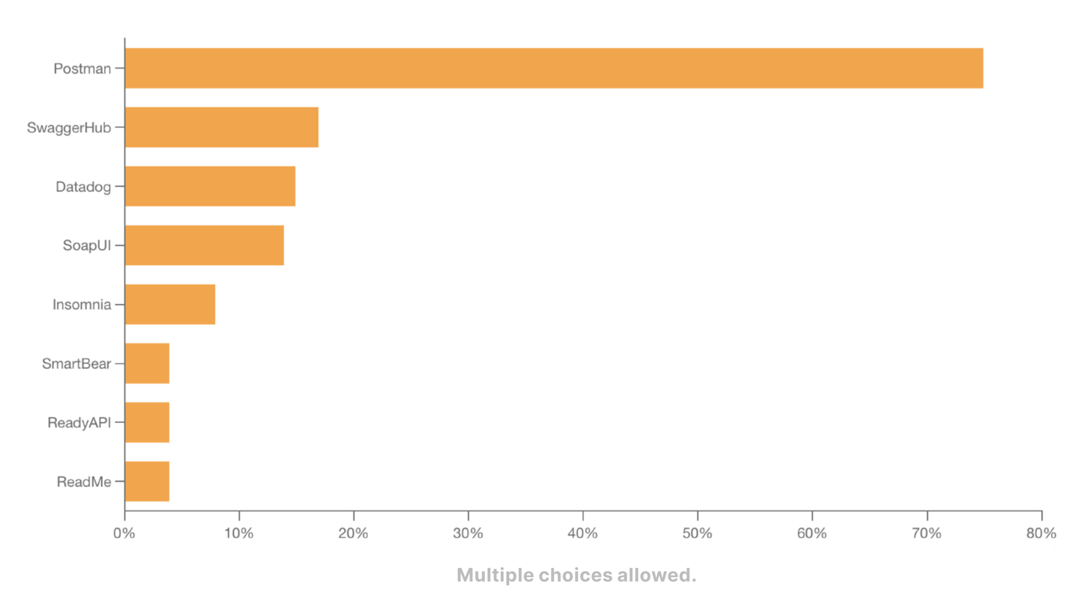
Tooling for APIs and development



API platforms and tools

When we asked which API tools and platforms people use, most respondents cited Postman. Datadog, SwaggerHub, and SoapUI also earned double-digit percentages.

SoapUI was used by 14% of all respondents, but that figure jumped above 20% in the government and financial services sectors.



Multiple choices allowed.

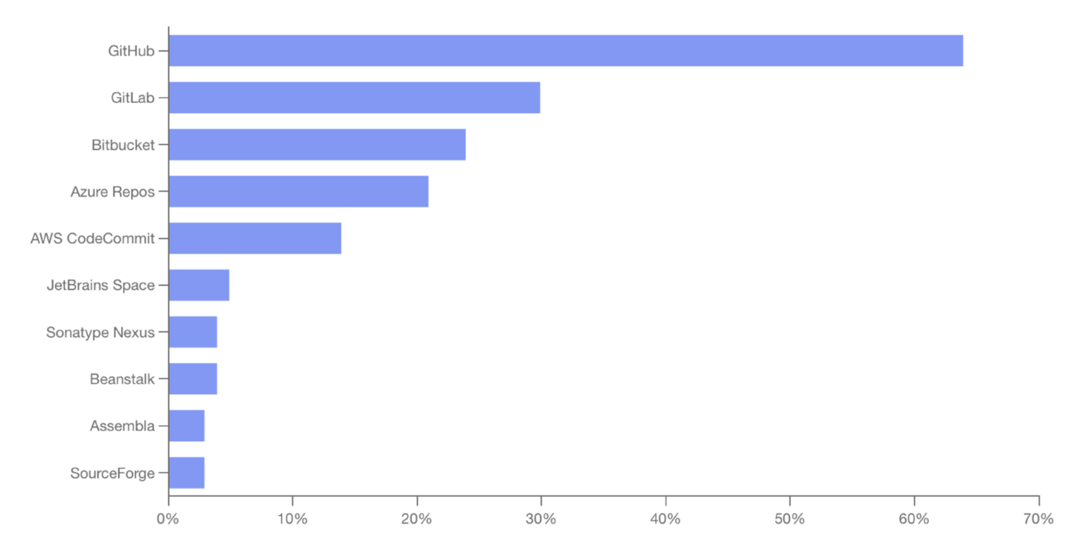
The following solutions were used by 2% of respondents: Rapid, Akana, APIMatic, Akita, Sauce Labs, Boomi Imperva, Stoplight, AlertSite, Backstage, Eggplant, Veracode, APIsec, and 42Crunch.

The following solutions were used by 1% of respondents: Cortex, Talend, Redocly, APIwiz, OpsLevel, mabl, Runscope, Catchpoint, Salt Security, Checkly, Moesif, StackHawk, Neosec, Rest United, Restcase, Noname, Tricentis, Optic, configure8, Traceable, Seekret, Uptrends, Buf, and Cequence.



Source-code tools

We asked which tools or platforms respondents use for source code. GitHub was the most popular choice at 64%, followed by GitLab, which was at 30%, and Bitbucket at 24%. Newer names such as JetBrains Space showed some recognition as well, especially in educational settings and among network engineers.

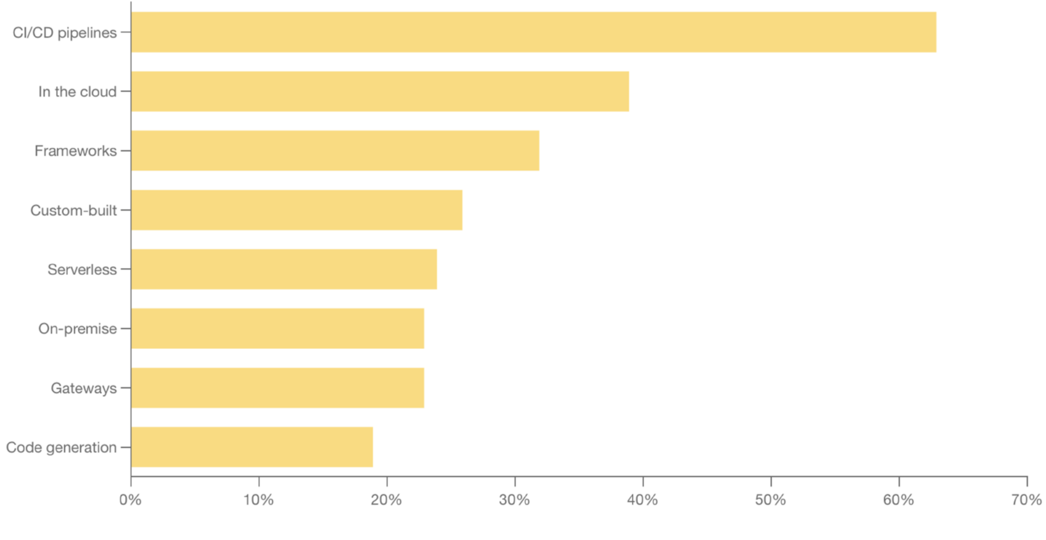


Multiple choices allowed.

Deploying APIs

When it comes to deploying APIs, CI/CD pipelines were even more popular than last year, with 63% of respondents naming them as the most common tool.

API-first leaders selected their choices in roughly the same order as all respondents, and reported an even greater uptake of CI/CD and in-the-cloud solutions. API-first leaders were less likely, however, to deploy using on-premise or custom-built solutions.



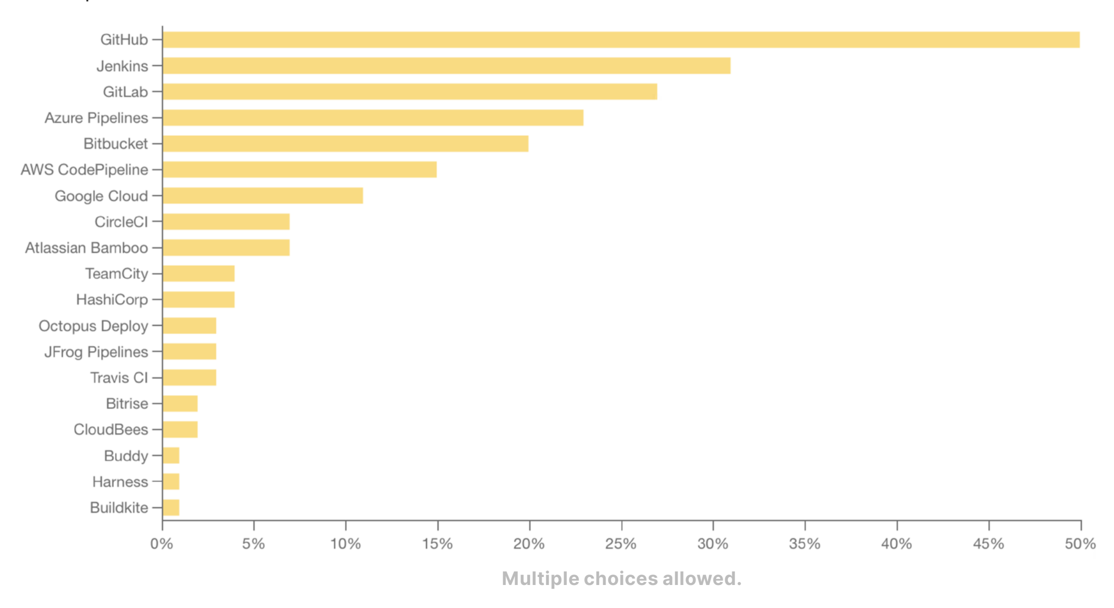
Multiple choices allowed.



CI/CD tools and platforms: Jenkins and GitHub square off

When asked which CI/CD solutions were favored, 50% of all respondents cited GitHub. Jenkins was a distant second at 31%.

At large organizations, it was a different story. Respondents at companies with over 1,000 developers mentioned Jenkins (53%) more often than Github (48%).

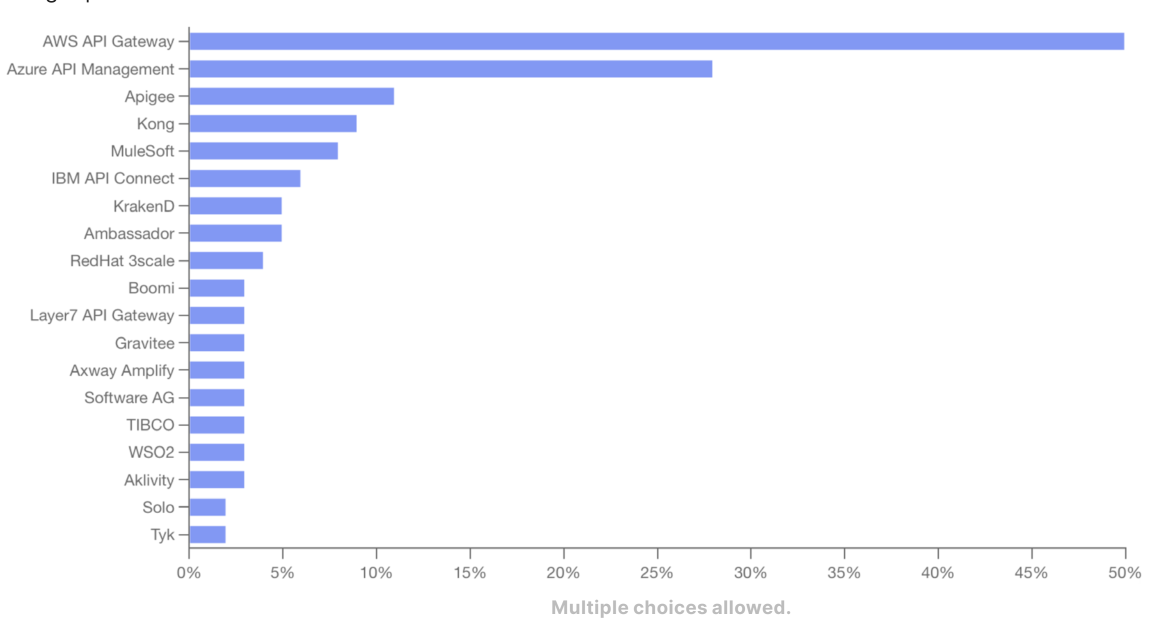


Multiple choices allowed.

API gateways and cloud API management: AWS, then Azure (for most)

When it comes to API gateways or cloud API management tools, two solutions stood out. Half of all respondents used AWS API Gateway, and more than a quarter used Azure API Management.

This ranking was flipped in the government and manufacturing sectors, though. Both showed a slight preference for Azure over AWS.



Multiple choices allowed.

API technologies





API technologies

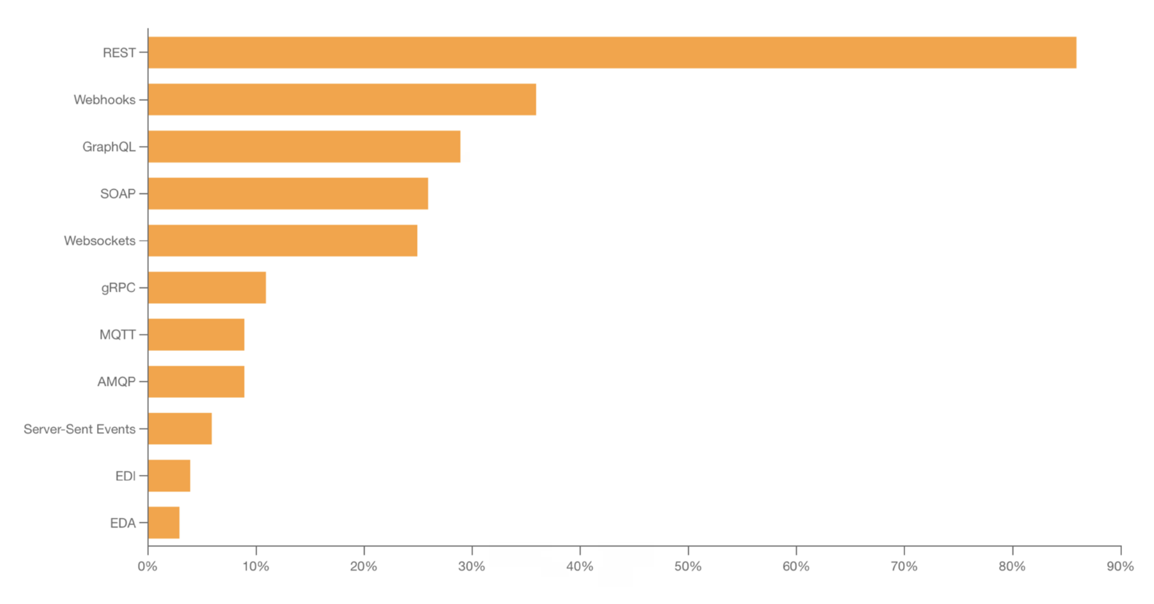


Architectural style: SOAP slips

While REST remains the most-used API architecture by far, it has lost a bit of ground to newcomers. This year, 86% of respondents said they used REST, down from 89% last year and 92% the year prior.

SOAP registered a notable drop. It was used by just 26% of all respondents this year versus 34% last year. The decline makes SOAP the fourth most-used architecture in our survey, down from the third spot last year.

GraphQL took SOAP's spot and was used by 29% of survey-takers.

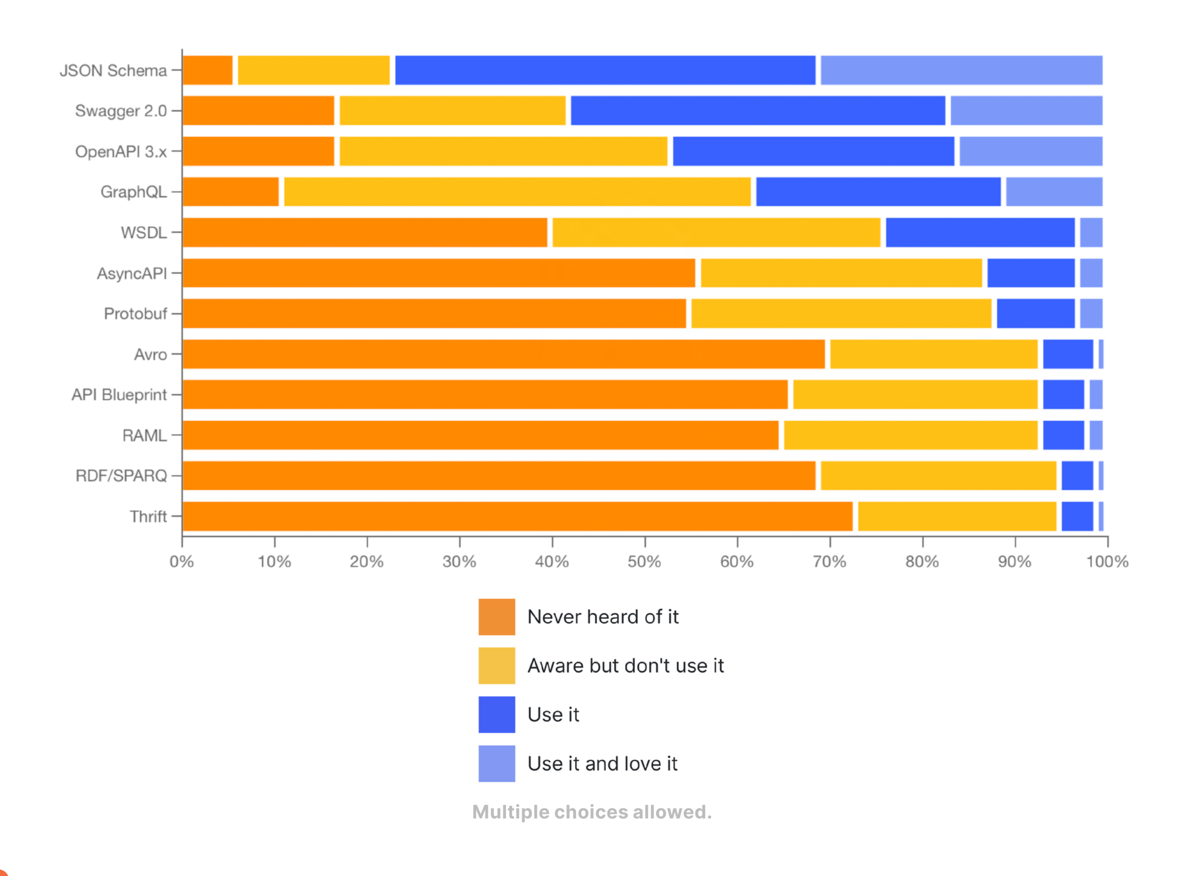


Multiple choices allowed.



Specifications: JSON Schema holds the lead

We also asked folks which API specifications they use and love. JSON Schema remains the top pick, named by almost twice as many respondents as any other. Swagger/Open API 2.0 and Open API 3.x were the next most popular choices, almost evenly tied.



Multiple choices allowed.

The outlook for APIs and more



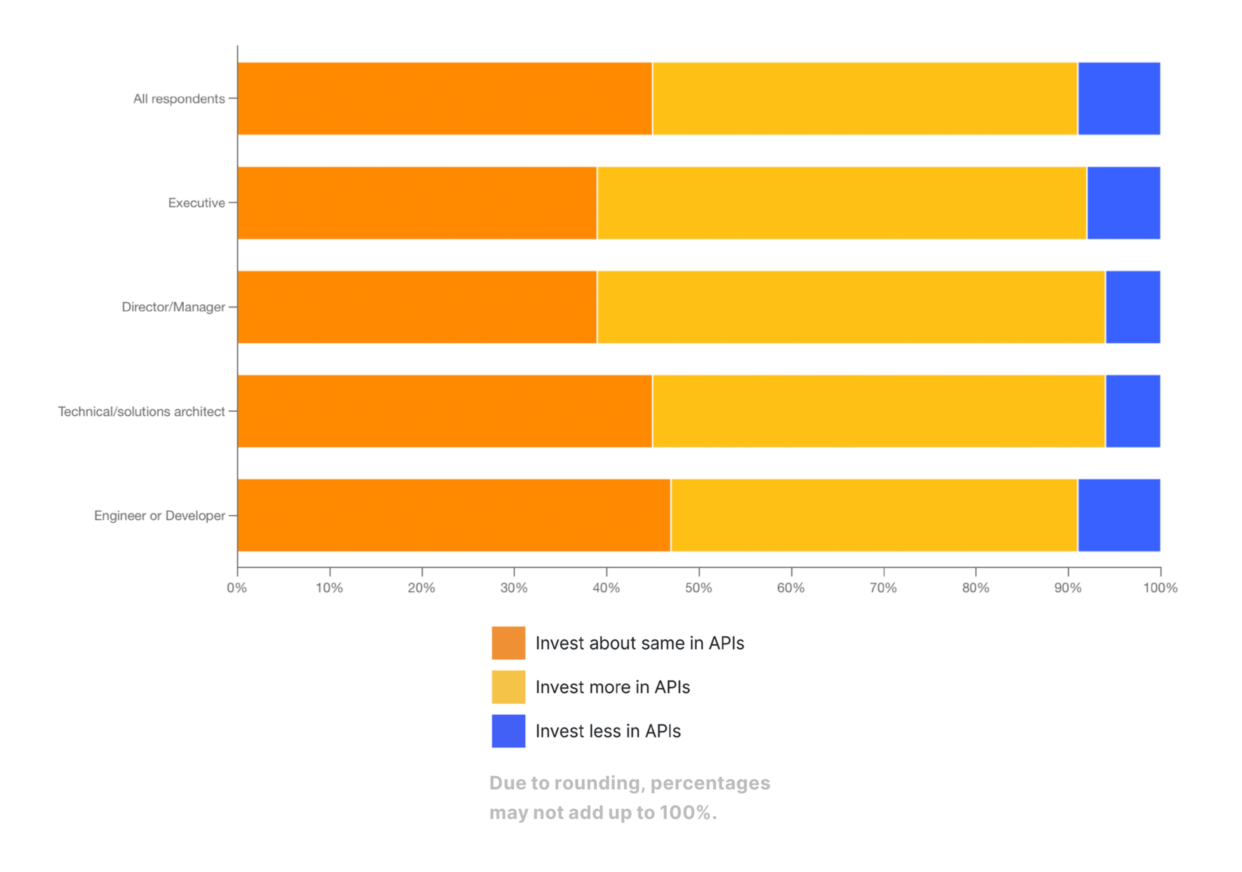


The outlook for APIs and more

API investments to climb

Organizations' investment of time and resources into APIs will increase or stay the same over the next 12 months, said 92% of respondents. That's up from 89% last year and may reflect a sense among some quarters that the worst of tech's economic contraction has passed.

When we polled just CEOs, we found they were more bullish than developers. Fifty-three percent of CEOs said API investments would increase in the coming year, compared with 44% of developers who said the same.



Due to rounding, percentages may not add up to 100%.



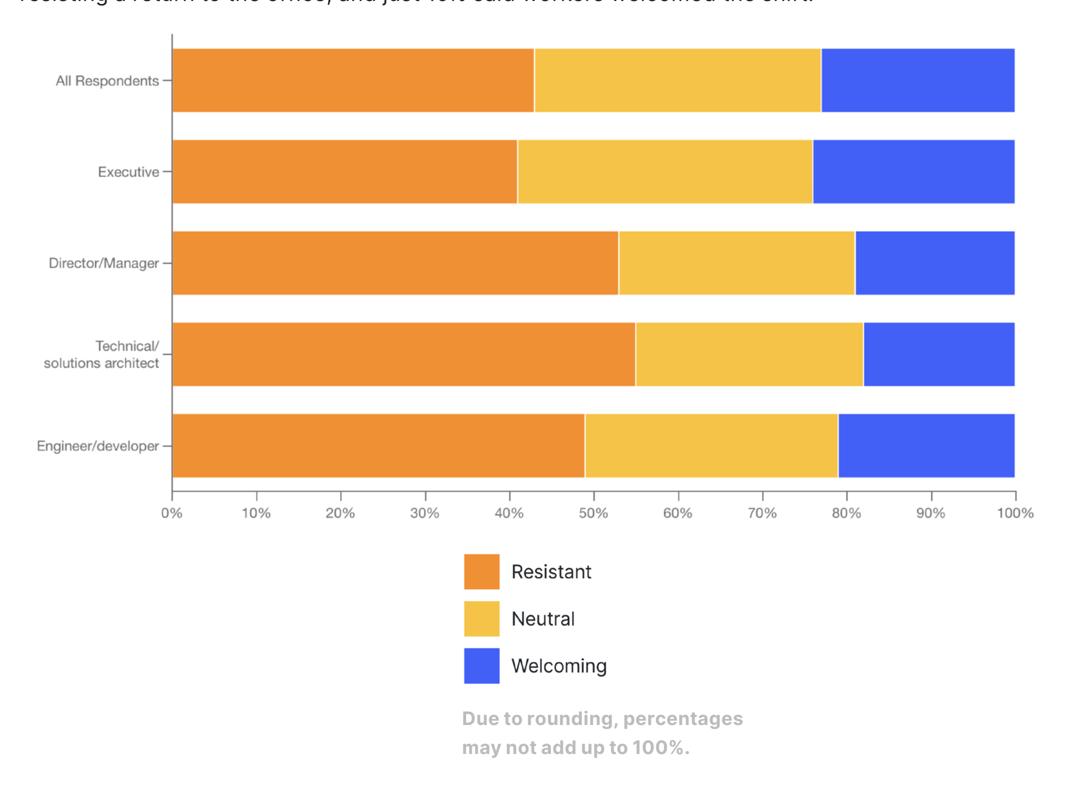
Return to the office

Many companies went fully remote in the past two years but now want workers in the office most days. Almost 70% of our survey-takers—about 28,000 people—fell into this camp. We asked them to describe employees' reactions to this shift.

The answers revealed differing perceptions that split along job lines. CEOs said reactions in their workforce were evenly split between resistant, neutral, and welcoming—about 33% each.

Developers and engineers saw it differently. From their perspective, 49% of employees were resisting the return to the office. Only 21% of workers welcomed the return.

Directors and managers rated employee dissatisfaction the highest: 53% said employees were resisting a return to the office, and just 19% said workers welcomed the shift.



Resistant

Neutral

Welcoming

Due to rounding, percentages may not add up to 100%.

Methodology





Methodology

This report is based on two sources: a survey of 40,261 developers and API professionals from around the world and anonymized, aggregated data from the Postman API Platform. The survey was fielded from April 25 through June 4. The answers to most nonnumerical questions were randomized in order to prevent order bias in answering.

Respondents were recruited largely through channels owned by Postman, including social media, email, and the Postman community forum. This year, Postman expanded its recruitment efforts to include technology-focused media outlets and influencers in tech.

As an incentive, respondents who finished the survey could opt to receive a copy of this report. Individuals from eligible geographies were also offered a chance to win prizes, including a PlayStation 5, a Steam Deck, five $100 Amazon gift cards, and ten $50 gift certificates to the Postman swag store.



Acknowledgments:

Thanks to the many people outside Postman whose input helped shape questions for this year's State of the API survey: Mehdi Medjaoui at APIDays, Derric Gilling at Moesif, Mark Boyd at Platformable, Bill Doerrfeld at Nordic APIs, James Higginbotham at LaunchAny, Alex Xu at ByteByteGo, Darrel Miller at Microsoft Graph, Mike Amundsen at Amundsen.com, Claire Barrett at API Collective, Alex Savage at Advanced, and George Mitry at Discover Financial Services.


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